

THE IMPACT OF A PHYSICIAN'S ASSISTANT CLINIC
ON A RURAL SOUTHERN COUNTY: A DESCRIPTIVE
EVALUATION

by

ROBERT EDMUND BURKE

A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1977

COPYRIGHT BY
ROBERT EDMUND BURKE, 1977

For my parents,

EDMUND LEO and MARY VERONICA

TABLE OF CONTENTS

LIST OF TABLES	vi
LIST OF FIGURES	viii
ABSTRACT	ix
Chapter	
I. OBJECTIVES	1
Introduction	1
Research Questions	2
Background	3
Societal and Cultural Conditions	4
The Physician's Assistant	7
Summary	8
A History of Rural Health Care Delivery	9
Overview of Community	11
Background	11
History of Health Care Services	12
County Political Situation	13
Summary	15
II. REVIEW OF LITERATURE	17
Introduction	17
The Physician's Assistant Literature	17
The Role of the Physician's Assistant	19
Licensure	20
The Recruitment of the Physician's Assistant	20
The Training of the Physician's Assistant	21
The Evaluation of the Physician's Assistant	22
Health-Services Utilization	24
Summary	25
III. CONCEPTUAL FRAMEWORK	27
Introduction	27
Approaches to Health Services Utilization Analysis	28
The Andersen-Newman Model	29
Summary	35
IV. RESEARCH METHODOLOGY	38
Design	38
Data Collection	39

TABLES OF CONTENTS (CONTINUED)

Chapter

IV. (Continued)	
The Sample	39
Field Test	41
The Data	41
Reliability and Validity	45
Statistics	47
Summary	47
V. FINDINGS.	49
Overview	49
Descriptive Survey Results	51
Discussion of the Six Specific Questions	56
Summary	84
VI. SUMMARY AND CONCLUSIONS	91
APPENDIX A	100
APPENDIX B	110
BIBLIOGRAPHY	137
BIOGRAPHICAL SKETCH	144
.	

LIST OF TABLES
(CONTINUED)

Table	Page
14. Change in Amount of Worry about Receiving Emergency Medical Services, Preclinic, Postclinic Opening Controlled for Clinic Utilization	68
15. Change in Amount of Worry about Having an Undetected Disease, Preclinic, Postclinic Opening Controlled for Clinic Utilization	69
16. Clinic Utilization by Prospective Utilization	72
17. Perception of Physician's Assistant Clinic as Compared to Usual Care Received by Prospective Physician's Assistant Clinic Utilization	74
18. Change in Number of Physician Visits, Preclinic, Postclinic Opening Controlled for Clinic Utilization	75
19. Change in Amount of Hospitalization, Preclinic, Postclinic Opening Controlled for Clinic Utilization	77
20. Change in Utilization of Prescription Drugs, Preclinic, Postclinic Opening Controlled for Clinic Utilization.	78
21. Change in Having a Pap Test, Preclinic, Postclinic Opening Controlled for Clinic Utilization	79
22. Discriminant Function for Wave I Prediction Results	83
23. Discriminant Functions for Wave II Prediction Results	85
24. Comparison of Wave I and Wave II Variable Means for Nonutilizers	86
25. Comparison of Wave I and Wave II Variable Means for Utilizers	87
26. Wave I Variable Means by Utilization	88
27. Wave II Variable Means by Utilization	89

LIST OF TABLES

Table	Page
1. Timetable for Data Collection for Impact of Physician's Assistant Clinic Study	31
2. General Format Change in Predisposing, Enabling, and Illness-Level Variables as a Function of Utilization of the Physician's Assistant Clinic	50
3. Wave I and Wave II Survey Comparisons of Predisposing Sample Characteristics	52
4. Wave I and Wave II Survey Comparisons of Enabling, Health Behavior Variables	54
5. Wave I and Wave II Survey Comparisons of Illness-Level Variables	55
6. Clinic Utilization by Occupation of Male Head-of-Household	57
7. Clinic Utilization by Respondent's Age	59
8. Clinic Utilization by Family Physician Visits	60
9. Family Physician Visits by Prospective Clinic Utilization	62
10. Change in Perception of State of Health, Preclinic, Postclinic Opening Controlled for Clinic Utilization	63
11. Change in Perception of Health Interference with Daily Activities, Preclinic, Postclinic Opening Controlled for Clinic Utilization	65
12. Change in Perception of Receiving Enough Care, Preclinic, Postclinic Opening Controlled for Clinic Utilization	66
13. Change in Amount of General Worry, Preclinic, Postclinic Opening Controlled for Clinic Utilization	67

LIST OF FIGURES

Figure	Page
1. Andersen-Newman Model of Determinants of Health Care Utilization	31
2. Model of Determinants of Health Care Utilization	32
3. The Andersen-Newman Model: Determinants of Health Service Utilization	34
4. The Modified Andersen-Newman Model: Determinants of Health Service Utilization	36

Abstract of Dissertation Presented to the Graduate Council
of the University of Florida in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

THE IMPACT OF A PHYSICIAN'S ASSISTANT CLINIC
ON A RURAL SOUTHERN COUNTY: A DESCRIPTIVE
EVALUATION

By

Robert Edmund Burke

August, 1977

Chairman: George Warheit, Ph.D.

Major Department: Sociology

The physician's assistant became a primary health-care provider in 1968. Since that time the physician's assistant has been the subject of editorial debate and commentary. Research has just begun analyzing the physician's assistant as a health provider. The focus of this dissertation is to descriptively evaluate the community acceptance of a clinic operated by physician's assistants in a rural southern county, where no other primary health service was available. The principal research question was: as measured by clinic utilization, did the county accept the physician's assistant clinic? This question was addressed by analysis of two surveys. The first survey was conducted one year before the clinic opened, the second one year after the clinic had begun operation.

Since there was no primary health care available in the county, it was believed that the county was in need of these services and that the establishment of the clinic would help alleviate an extreme need.

The analysis employed a health-service utilization framework. Variables which affected clinic utilization were examined. The results of these analyses are important to the growing body of research literature and to health planners who have the responsibility for developing and monitoring new primary health-care providers in the expanding health system. The survey data did not support that the county residents were experiencing extreme health-care needs. The data demonstrate that the residents had become accustomed to traveling thirty miles to the medical centers of a nearby city.

The findings suggest the clinic was utilized by county residents for some health care and that there was positive change in certain illness-level variables among the utilizers of the clinic.

CHAPTER I OBJECTIVES

Introduction

This dissertation presents data from a research project designed to investigate the establishment and community acceptance of a physician's assistant clinic in a rural southern community.

It was assumed by health planners at a nearby university that a county without recognized, established, and professional medical-care-personnel living and practicing within its boundaries would probably be in a state of extreme need. The physician's assistant clinic was seen by some of these planners as a potentially viable method of alleviating, at least somewhat, the acute shortage of primary-care deliverers in rural areas in Florida and elsewhere.

In order to assess the effectiveness of the physician's assistant clinic in meeting health care needs, a series of health surveys was planned. These surveys were designed to provide information about the service utilization patterns of residents of the county before and after the physician's assistant clinic became operational. After an initial health survey of the target county was completed, a second one was designed to answer two basic questions: 1) what was the impact of the physician's assistant clinic on the health practices of those in the county; and 2) were the services provided a viable alternative to traditional primary medical care? The method of examining the impact of the new professionals upon the county was the measurement of the utilization of health services rates of a purposive sample of county

residents. These data allow a comparison between the users of the physician's assistant clinic and the users of traditional health care modes.

The community under investigation, as will be shown in the next section, is typical of many rural counties in the United States. The county is sparsely populated, relatively homogeneous, and dependent upon other neighboring counties for the majority of necessary services. The impact of the physician's assistant clinic on the health practices of this rural county was seen as having far reaching implications in that if this clinic was successful, it would become a model for planners of rural health care delivery at a regional and national level. The research reported in this dissertation is significant for two reasons. First, from a sociological perspective, it describes the acceptance and utilization of a physician's assistant clinic and second, as applied basic research, it can be a guide for future planning of health services in rural communities.

Research Questions

The research focused on one general question: will the residents of a rural community accept and utilize a physician's assistant clinic? This question is comprehensively addressed by these six specific sub-questions.

1. Who in the community will utilize the clinic?
2. For what illnesses or injuries will they utilize the clinic?
3. Will they continue to utilize the clinic over time?
4. Will the clinic be compared favorably to other health-care services received?

5. Will utilization of the clinic affect the health seeking and utilization behaviors of those in the community?

6. Will the clinic be utilized by all segments of the community?

These questions are addressed by analysis of the two health surveys. The questions were the issues that were important to the developers and sponsors of the clinic.

The establishment of the physician's assistant clinic was not a spontaneous event. The growth of advocacy for health care services nationally and the conditions specific to the target community contributed to the explanation of the development of the physician's assistant clinic. Both of these conditions are discussed in the next section.

Background

The availability of medical care has become a concern to many varied segments of society. Those in medical organizations, politicians, sociologists, and the consumer public have their own perspectives regarding the need for medical care. Several events are, perhaps, casually related to this surge of demands for health care. These events include national health insurance programs which have been successful in other western nations, third party payment agencies which have made health care services available to individuals not previously covered, and the federal programs of Medicare and Medicaid which have withstood their shaky beginnings and, in fact, have recently become broader in scope and medical care coverage.

The availability of medical services due to third party payment by both the private and public sectors has had a great impact on the health care delivery systems in the United States. More individuals

have coverage for health care services than at any other time in history. As third party payment became more prevalent, the maximum or ceiling charges permitted by third party payers became the floor or minimum charges for providers. This fact, together with increasing inflation, has resulted in a spiral effect in health care costs. Additionally, labor unions have applied pressure to management for more health care coverage. The additional coverage has affected both the corporate profits and the costs of their products to the consumer. This has had a circular inflationary effect on the economy. It also has the effect of increasing the demands by the public for health care services. In addition to increased demands, strict professional control has kept providers in scarce supply.

On analysis, the mass media reflect the value of health and health-related products in contemporary society. The media commercials suggest that health is an individual's right and that good health is the most important product not only for the individual but also for the society to obtain and maintain. In the last decade, health spas and health food stores sprang up over night to meet the demands for health products and services. "Natural ingredients," "organic" foods and cosmetics, as well as "health" clothes such as the jogging suit have all just recently become household words and items. In light of these formal and informal pressures for more and more services a basic question persists: how can the American medical system meet these increasing demands and at the same time remain in control of their distribution, quality, and the fees charged for them?

Societal and Cultural Conditions

As noted above, many societal factors are making increased demands upon the organized medical system for additional health-care deliverers.

According to Health United States 1975 (1976), in 1973 there was one physician for every 562 individuals in the United States. Physicians, however, are clustered in metropolitan areas where there was one non-federal physician providing patient care for every 500 residents. The ratio for small nonmetropolitan areas was about one physician for every 2,000 to 2,500. The population-physician ratio was about four or five times greater in the nonmetropolitan areas than in metropolitan ones. Furthermore, while there has been a decline in the number of general practitioners in the past ten years, there have been increases in the number of other medical specialties that are considered to be primary care deliverers. These specialties are internal medicine, pediatrics, and obstetric-gynecological medicine. Health manpower does not seem to suffer from shortage as much as from distribution problems and this maldistribution is undoubtedly related to many present demands.

The attraction of the physicians to rural areas had been unsuccessful. Placing physician's assistants in rural areas where a metropolitan based physician would be able to monitor them by telephone and periodic visits would aid in the physician, rural population location incongruence. Utilizing physician's assistants in this way, a physician would be able to serve a rural population without having to leave the metropolitan area on a permanent basis.

A simplistic method of conceptualizing this situation is to view the consumer and the medical system as two sections of an equilibrium model. In order to exist and be maintained, all crucial demands for services must be met. Thus, today's consumer demands for increased medical services should produce or result in an increase in the medical resources available. On the other hand, a technique which would

convince the consumer to decrease his demands for services would allow equilibrium to exist without having to change the medical system. There are four methods whereby the consumer and the medical system may approach equilibrium.

One method of meeting the demand for more primary health care services would be to redistribute existing primary health professionals. Any such proposed redistribution would meet with strong professional resistance on the part of the medical community: it is not a very viable consideration.

Another method of meeting rural health needs would be to produce more physicians pledged to practice in rural areas. There are two problems with this possible solution. First, the number of physicians is largely controlled by the medical profession and a plan to increase the number of physicians would not meet with ready acceptance from this group. Second, federal loan programs which are forgiven if physicians agree to practice in rural communities have not been successful. Less than five percent of those who received these loans have requested forgiveness. They, perhaps, have been socialized through their educational experience to believe rural areas are not the best location for their practice.

A third method would be for communities to actively recruit foreign medical school graduates but foreign medical school graduates have not been attracted to rural communities; they require collegueal relationships to facilitate American licensure. The reasons these three methods of attracting physicians to rural areas have failed are both economic and social. Rural areas typically do not have the availability of laboratories, pharmacies, hospital beds, and other support networks required for physicians to prosper professionally and personally.

A fourth method proposed to extend the resources of the medical system has been efforts to develop a new paraprofessional. The primary function of such a provider is the provision of primary health care services to rural communities. This method has been endorsed by the AMA because this new paraprofessional would permit the medical system to expand under the direct control of the existing medical associations. This new paraprofessional is only licensed to give primary health care services under the direct supervision of a licensed physician. This method has been actively supported for the last ten years by both the established medical system and the government. Furthermore, the acceptance of this new position would necessitate societal adaptation. Potential consumers would have to be made aware of the new position, know the services performed and become convinced of their quality. The physician's assistant can be considered AMA's response to the societal demands for more care. This new provider calls for adaptation from the societal members in terms of their attitudes, expectations, and behaviors.

The Physician's Assistant

As noted, one of the primary ways the medical system responded to the increased demands for more providers was by the creation of a new health care status, the physician's assistant. This new health care provider was sanctioned by the American Medical Association, when in 1970 they drafted "Guidelines for the Development of New Health Occupations" and in 1971 the AMA House of Delegates approved "Essentials of an Approved Education Program for the Assistant to the Primary Care Physician" (Johnson, 1975). The latter document clearly defined the essential types of patient services a physician's assistant may perform:

- 1) The initial approach to a patient of any age group in any setting to elicit a detailed and accurate history, perform an appropriate examination, and record and present pertinent data in a manner meaningful to the physician;
- 2) Performance and/or assistance in performance of routine laboratory and related studies as appropriate for a specific practice setting, such as the drawing of blood samples, performance of urinalyses, and the taking of electrocardiographic tracings;
- 3) Performance of such routine therapeutic procedures as injections, immunizations, and the suturing and care of wounds;
- 4) Instruction and counseling of patients regarding physical and mental health on matters such as diets, disease, therapy, and normal growth and development;
- 5) Assisting the physician in the hospital setting by making patient rounds, recording patient progress notes, accurately and appropriately transcribing and/or executing standing orders and other specific orders at the direction of the supervising physician, and compiling and recording detailed narrative case summaries;
- 6) Providing assistance in the delivery of service to patients requiring continuing care (home, nursing home, extended care facilities, etc.) including the review and monitoring of treatment and therapy plans;
- 7) Facilitation of the physician's referral of appropriate patients by maintenance of an awareness of the community's various health facilities, agencies, and resources. (Johnson, 1975, p. 23)

Summary

This section presented a discussion of the factors influencing the increased demand for health services and how the creation of a new medical provider meets these demands. The physician's assistant was viewed as the AMA's creation, an ameliorative agent whose function is to provide primary care. This new paraprofessional is accepted and controlled by the medical profession and legitimated by state statutes. Hence, they will be in existence for some time to come and are worthy of being studied.

A History of Rural Health Care Delivery

"The notion that rural life had its health handicaps, in spite of fresh air and sunshine, was expressed as early as 1862 by the Commissioner of Agriculture to President Abraham Lincoln" (Roemer, 1976, p.3). Several sporadic attempts to alleviate the rural health problems were initiated late in the nineteenth century. It was not until the enactment of the Sheppard-Towner Act in 1921, however, that a systematic attempt was made to strengthen rural county health departments by making available grant funds to support maternal and child health centers. The depression of 1929 was a setback to this rural health initiative as the Sheppard-Towner Act was terminated. In order to build up preventive health programs, Titles V and VI of the Social Security Act of 1935 had the effect of reinstating the Sheppard-Towner Act. By 1942, some 1,800 counties had public health coverage. The remaining 1,250 counties without coverage were typically rural with small population bases. At the close of World War II, an effort was made to consolidate counties in order to provide public health coverage. In 1945, Dr. Haven Emerson launched the "basic six" program of APHA. The duties of public health departments were to be concerned with six tasks: 1) communicable disease control, 2) environmental sanitation, 3) maternal and child health preventive services, 4) health education, 5) vital statistics, and 6) laboratory services. These services, although needed, do not include direct primary patient care. This component of rural health-care delivery was left to private physicians. Some states had proposed plans to recruit physicians to their own rural areas. New Hampshire in 1923, Virginia in 1942, and Tennessee in 1953 had each enacted legislation to actively recruit and financially support physicians for their rural areas. In 1967, the National Advisory

Commission on Health Manpower requested there be not only a growth in numbers of physicians but also an increase of manpower in the delivery system with new categories of health professionals.

Other countries have had a history of medical assistants as primary health-care deliverers. Russia had developed the "feldsher", a type of medical or physician assistant in the 1870s, to function as the primary deliverer of health care in the rural regions. Other countries, e.g. Iran and Mexico, also have similar requirements for newly trained physicians. Following these models, in the late 1960s, federal grant moneys were made available to academic institutions to develop training programs for medical assistants; nurse practitioners, physician's assistants, and midwives were being trained under the auspices of both medicine and the federal government. Furthermore, in 1970, the Emergency Health Personnel Act established the National Health Service Corps. Under this act, physicians, nurses, and dentists were sent to needy communities where they practiced in lieu of fulfilling their active military obligation. These programs were designed to increase the medical manpower in rural areas.

To augment the increase in health manpower, several federal acts were passed to increase the supply of hospital beds in rural areas. The most famous of these was the National Hospital Survey and Construction Act of 1946. This legislation, better known as the Hill-Burton Act, provided grant funds to states for the construction of hospitals. The maximum aid was earmarked for rural communities. Today, there is no longer a disparity of bed supply between urban and rural areas. In fact, the trend in the past thirty years is that hospital utilization by rural-living individuals is upward. With transportation improvements,

rural residents seem to be bypassing the rural community hospital for the more sophisticated ones in urban areas.

This history demonstrates that the delivery of primary health care to rural communities has been an issue in this country for over a hundred years. It has not been, however, until the last decade that a systematic attempt has been made to alleviate the problems of rural primary health care.

Overview of Community

The goal of this section is to describe three important factors in the county which have a bearing on the acceptance of the physician's assistant clinic. First, the historical background of the community is discussed. Second, the history of medical services available in this community is outlined, and third, the local political situation which gave rise to the initiation of the physician's assistant clinic is presented.

Background

The county which served as the research site is situated in North Central Florida. Its north and west boundary is formed primarily by the Suwannee River as it makes its winding path to the Gulf of Mexico. The adjacent county due east is a standard metropolitan statistical area, which has a state university and is a major agricultural trade cross-roads. The research county is primarily agricultural. One of its largest employers is the forestry division of a national lumber conglomerate. The county is not self-sufficient. It does not have a hospital, college, railroad, or major shopping area. Some of the churches are served by itinerant or missionary ministers who drive in each Sunday. The major churches are Baptist and Church of Christ.

The county seat has one restaurant, a high school, court facilities, several hardware and farm implement dealers, a library, and a bank. A bus serves the county.

The central section of the county is swamp land. The major inhabited area forms an "L" shaped figure along the western and southern edge of the county. There is a state highway going east-west along the southern edge of the county. According to the 1970 census, the county has 3,551 residents, of whom 3,259 are white and 287 are black. The total male population is 1,797; the total female population is 1,754.

History of Health Care Services

The health services in the county have been limited. At one time, there was a general practitioner living in the county seat; he did not remain in practice long as age and ill health caused him to retire. His son took over the practice but left the county for personal reasons. On his departure, the county was without its own physician. Residents in need of medical services had no alternative but to go elsewhere.

There were naturopaths functioning in and around the county; the river doctor, for example, was a naturopath who, for a fee of five dollars in cash, treated clients and distributed various herbs and teas for cures. The author learned about the river doctor from a clinic patient. The river doctor saw clients in his mobile home located outside the county seat on the bank of a river, hence the name. According to this informant, the river doctor's cures had been effective and his business brisk. The informant explained the only reason she came to the physician's assistant clinic was that the clinic billed patients at the end of the month. By the time the bill arrived, she would have

the ability to pay her fee; the river doctor wanted cash and extended no credit.

Residents of the county in need of hospitalization were sent to the county hospital in a neighboring county. In the mid-sixties, two other hospitals opened in that county, a university teaching hospital and a Veterans Administration Hospital. These were followed by a private hospital in 1972. This county grew to become a major medical center. The residents of the research county have always been dependent on this neighboring county for hospital services. With the health-care delivery in the research county having a history of being scarce, its residents developed a routine of leaving the county to seek medical care. With the road to the neighboring county wide, flat, and accessible, it may not have been considered a burden by county residents to drive to a major medical center, thirty miles to the east.

County Political Situation

The author also learned that a deceased state legislator had been an influential political resource in and for the county. The representative was considered to be the individual responsible for establishing an adolescent detention center built at the far southwest corner of the county. The residents and professional staff did not socialize with the county residents but the center did provide jobs. The representative and the mayor of the county seat were both responsible for creating the County Health Board.

This board received state funds for creation and maintenance of a medical facility. Some of these funds subsidize the physician's assistant clinic. The County Health Board approached the Department of Community Health and Family Medicine at the medical college of the

university and requested a rural health clinic, similar to one operating in another rural county. The response from the medical college was not to create a clinic similar to their existing one but rather to use the opportunity to establish a clinic where the physician's assistant was the principal deliverer of primary care.

Three factors, a new County Health Board eager to begin a primary health-care-delivery system, an aggressive Department of Community Health and Family Medicine, and the existence of an acute shortage of health care services all came together. The result of the confluence of these three factors was the proposal of an innovative health care system, the physician's assistant clinic.

The Department of Community Health and Family Medicine and the Community Health Board came to an agreement whereby the clinic opened with two physician's assistants who were under the direct supervision of a physician. In addition, two other physicians from the medical college also served the clinic. During the negotiation and planning stage, the state representative who was a vital voice in this process, died. His death, however, did not hamper the establishing and opening of the clinic.

This overview has presented a community profile and a history of health services and has sketched the political factors which influenced the establishment of the physician's assistant clinic. This information gives perspective to the issue of acceptance and utilization of an innovative health care service. The county is not industrial, is not used to rapid changes, is tied closely to the land, and is dependent upon its neighboring communities for services. The fact that no health care services were available in this community is consistent

with the community history. The political factors described are the important reasons for the establishment of the physician's assistant clinic.

Summary

The history of health-care delivery shows that only recently has there been an attempt in this country to systematically address the issue of providing primary health care to rural areas. The country had far fewer communities without physicians in 1900 than today. Two reasons were given to explain this fact. First, the choice location to practice medicine is the metropolitan areas. Secondly, rural family practice physicians since World War II have been moving to metropolitan areas. These locations have medical centers, laboratories, pharmacies, and other profession-oriented services which facilitate the practice of medicine.

This research describes the establishment and acceptance of a physician's assistant clinic in a rural community. It addresses several important questions concerning the utilization of a new type of health service for rural communities. The community overview demonstrated that this community is typical of many rural American communities. The results of the research are relevant and important to the study community as well as to other similar rural communities. The next chapter presents a literature review concerning physician's assistants and health services utilization research. The rich literature which focuses primarily on physician utilization lends itself to an analytical framework for the research.

Chapter III presents a conceptual and analytical framework. Chapter IV presents the methodology of the research design, the data collection procedures, and description of key variables. Chapter V presents the conclusions and summary of the research.

CHAPTER II REVIEW OF LITERATURE

Introduction

The goal of this chapter is to review the literature on physician's assistants in the context of the health-services delivery field. The review is designed to provide a framework for the presentation of the findings.

The Physician's Assistant Literature

The physician's assistant as a health provider came into existence in 1968, hence, the literature is limited from that year to the present. The literature can be placed into five categories:

- 1) The role of the physician's assistant,
- 2) The legality of the physician's assistant,
- 3) The recruitment of the physician's assistant,
- 4) The setting up of the physician's assistant training programs, and
- 5) The evaluation of the physician's assistant.

Ford (1976) attempted to address the sociological implications of the physician's assistant. Her research suggests that sociological inquiry into issues of authority, power, status consistence, quality of care, etc., have not been empirically dealt with. Instead, research that is based in other professions, primarily nursing, have looked at the physician's assistant from outside in order to achieve their own professional goals and legitimacy. Ford, herself, falls into the same

reasoning process as she directly compares the development of the physician's assistant with the development of the nurse practitioner. This is problematic in that both of these emerging occupational roles have different origins and power bases. The nurse practitioner is primarily a development of entrepreneurial nursing; the physician's assistant as currently developed is directly subservient to a local practicing physician.

The sociological aspects of the physician's assistant have not been addressed directly in the research literature. Thus, this review limits itself to the five categories of available research concerning the physician's assistant.

The literature has been written chiefly by physicians, nurses, and medical administrators. Literature written by the physician's assistants themselves has, as yet, not emerged.

Sadler, Sadler, and Bliss (1972), who are physicians and attorneys, were the first to prepare a comprehensive treatise dealing with the various components, issues, and questions surrounding the physician's assistant. Their research presented each of the above listed research topics and focused primarily on an analysis of the physician's assistant in terms of recruitment and his role in the medical system. They also addressed themselves to the medical and legal ramifications of the position in the total system. Their research, however, is not based on empirical data but is a descriptive general overview of the areas listed above. Nevertheless, their monograph was the first attempt to view most of the issues concerning the physician's assistant in a systematic manner.

The Role of the Physician's Assistant

The greatest body of physician's assistant literature is concerned with defining the role. These articles, interestingly enough, are primarily written by nurses who view the development of the physician's assistant as "the symptom" of the inability, both of medicine and nursing, to define their individual roles, to respect each other's competencies, or to deliver an acceptable level of care (Rothberg, 1973).

Andreoli (1972) raises a different aspect of role behavior. From her observation, the physician's assistant's relationship with a patient usually begins before the patient is hospitalized and ends, not with patient discharge, but rather is continued for posthospitalization checkups. Andreoli states the nurse is educated, whereas the physician's assistant is only trained in certain techniques. Lambertsen (1972, p. 32), also a registered nurse, considers the role of the physician's assistant an immediate extension of the physician and argues: "Territorial disputes (between physician's assistants and nurses) have no place in the decisions that must be made. The objectives for health manpower must focus on the ultimate potential of every person." The nurses are raising the issue of where in the health manpower network the physician's assistants are to be placed. Are the physician's assistants going to take away some of the newly carved professional territory of the nurse? The physicians, on the other hand, see the role of the physician's assistant as an immediate extension of themselves. Estes (1973, p. 197) describes the role of the physician's assistant: "...the assistant must be able to assist in and function in any of the sites in which the M.D. is active--clinic, hospital, or patient's home--and must be available at night as well as days. Because of this requirement for mobility and

the fact that nurses were in short supply, it was decided to utilize men rather than women." The definition of the role is one factor. The actual role taking and role behavior of the physician's assistant has yet to be systematically described or verified in the literature.

Licensure

The second most commonly reported aspect of the physician's assistant concerns legitimation. By whom will the physician's assistant be licensed, and, if licensed, to whom and for what is he legally responsible? Can a nurse take professional orders from a physician's assistant? Young (1972) reports that the AMA had placed a moratorium on the approval of new licenses for all new health paraprofessionals. Before these paraprofessionals are given approval for licensure by the AMA, Young suggests two issues need to be resolved. The first is to standardize the physician's assistant in regard to training and practice. The second is to establish consensus of role definitions of not only the physician's assistant but the M.D. as well. In other words, if an M.D. must supervise his physician's assistant, of what does this supervision consist? Some states such as Florida grant licenses to physician's assistants. However, this law clearly states physician's assistants are responsible to the physician under whose supervision he works. Furthermore, the physician's assistant is to work only under a physician and a physician is allowed only two physician's assistants in his employ. (Florida Statutes, Chapter 458.135, 1975)

The Recruitment of the Physician's Assistant

Another issue of the literature is that of recruitment. The first recruitment of physician's assistants (Estes, 1971) was aimed at military corpsmen who already had some medical experience. Now that the Viet Nam

conflict has passed and military service has become voluntary, the availability of corpsmen has declined. Horsley and Aschenbrener (1973), as well as Orion and Schulten (1973), agree since the services of a physician's assistant are most needed in the rural areas of this country, an attempt must be made to recruit high-school graduates who have a strong desire to serve in these areas. They suggest those desiring to work in rural areas be given preferential treatment. The literature, again, is ideologically biased and does not take into account the impact that the training as a socialization agency may have on changing the physician's assistant's mind as to where he will practice.

The Training of the Physician's Assistant

The training of a physician's assistant and the establishment of training programs have been dealt with in the literature, with considerable overlap. Again, however, little or no empirical research is found. Stone and Bassett (1972) conclude that the greatest benefit of the Medex training program is that the physician's assistant and the M.D. have a one-to-one relationship, thereby allowing the physician's assistant to learn first-hand and by experience. Adamson (1971) suggests physician's assistants be trained along with M.D.'s and R.N.'s primarily to learn where they fit into the health-care system. Adamson, therefore, is suggesting that the training emphasize socialization. Bergen and Clapp (1972) clarify that the training program is terminal; that is, there is limited mobility. They feel the physician's assistant program must not become a manner in which a student can later be admitted to medical school to become a doctor. Johnson (1976) concerned his research primarily with the anticipatory socialization process and the training stages of becoming a physician's assistant. He finds that

physician's assistants are products of both the medical system and the societal system. More importantly, he states (p. 185),

"The A.M.A. established guidelines for these programs and for the use of physician assistant in each state. In this manner, the medical profession has essentially controlled the introduction of the physician assistant. Furthermore, the physician's assistant from training stage to practice stage, unlike physicians themselves, remains in a dependent relationship to a physician."

The Johnson research and this research are complementary. The former focuses on socialization and training; this research analyzes community impact and acceptance once the physician's assistant is in practice.

The Evaluation of the Physician's Assistant

The last section of the literature involves the evaluation of the physician's assistant in the medical environment. Four studies have been found that use data as a basis for evaluation. Coe and Fichtenbaum (1972) evaluate the physician's assistants employed in a small community hospital. The evaluation is based on interviews with other members of the hospital staff. They analyzed the perception of the physician's assistant role through others in the role set and found no consensus on the role definition of the physician's assistant. The physician's assistant were seen by the nurses as a vehicle for their own upward mobility. The number of physician's assistants at this hospital is not mentioned nor is the method of interpretation of their interviews. Strunk (1973) examines patient attitudes toward the physician's assistant. He develops a two-factor index based on a sample of 300. He finds that acceptance of the physician's assistant for minor medical care is greatest among nonmarried middle-class respondents who have had some exposure to college. The acceptance drops, however, for

major medical care. Ford (1972) examines the case loads of physicians who have been utilizing a physician's assistant and found there is an increase in case load of 20 percent. Demaria, Cherry and Truesdell (1971) report on the peer review of physician's assistants in the Marines. The peers were not other physician's assistants but M.D.'s. This program evaluation shows the benefits of their own training program. They find their physician's assistants perform at a better-than-acceptable level. Their research demonstrates that, by utilizing physician peer review, their training program goals have been met.

Evaluation may be of several types. Evaluation can be of the program (Demaria, Cherry and Truesdell, 1971); the process (Coe and Fichetenbaum, 1972; Johnson 1976); the outcome (Ford, 1972; Strunk, 1973) and the impact upon the community. No literature could be found dealing with the impact of the physician's assistant on the community.

The review of literature demonstrates that the physician's assistant, as a new health provider, has been described with regard to his real and ideal roles in the health care system. The legal, training, recruitment, and program issues are reported primarily from an editorial or ideological perspective. These reports, however, contribute to this research since they clearly demonstrate the need for analysis of not only the physician's assistant as a new phenomenon but also the acceptance of this new health provider by the community at large. As presented in the following chapters, this research is similar to that of Strunk (1973). But, unlike Strunk's, it describes the response of a community to physician's assistants where they are the only primary health care providers available. The evaluation of Strunk focuses on current physician's assistant utilizers in an acute

care setting. This research represents a logical progression in the systematic analysis of a new health-care provider.

Health-Services Utilization

Concepts such as primary health care delivery and health services utilization are necessary and meaningful for analysis and interpretation of the results of the study. Many studies have been undertaken whose purpose is to explain why individuals utilize a health care facility in order to build a predictive model for health care facilities and programs planning.

Bodenheimer (1970), Freeborn and Greenlich (1973), and Rogers (1973) determined that availability of services or access to services were the primary issues of health care utilization. Chen (1973) developed a utilization index that was composed of length of time to get an appointment, length of travel time, and length of waiting room time. These research efforts were primarily monocausal. Donabedian (1973), Mechanic (1972), Shortell (1973), Beck (1973), Andersen et al. (1971), Anderson and Bartkus (1973), and Andersen and Newman (1973) have all forsaken a simplistic unicausal explanation for health services utilization in favor of multifactor explanations. Donabedian's (1973) research documents that socio-organizational variables such as geographic or distance variables explain health service utilization. Mechanic (1972) further confirms the importance of these variables but more importantly states that the individual must also be willing to seek health care and perceive he is in need of these health services. Mechanic further argues these components of health-care seeking behavior are learned and are a function of cultural or subcultural values. Shortell's (1973)

research suggests although there are many factors which influence health service utilization, the individual must also want this service. Beck (1973) argues the primary reasons for nonutilization are the cost of the service and its general availability.

These studies typically use the use-of-service as the primary unit of measurement, that is, individuals who either have utilized and/or are utilizing the service. These rates-under-treatment studies do not take into account individuals who may need the service and are not users. Anderson and Bartkus (1973), for example, have developed a behavioral model for the choice of health care. Their key variable is the patients' ability to recognize symptoms as an indicator of need and health seeking behavior. Since the sample was composed of patients at a student health clinic, it may not be representative of the population. Unfortunately, Anderson and Bartkus do not build their model with respect to nonusers who may be in need of health care.

Andersen (1968) and Andersen and Newman (1973) have developed a general model of health care utilization that divides the variables that are influential in determining health care utilization into three major categories: predisposing, enabling, and illness level. This health services utilization model is used in this study as a framework for presentation of survey data and explanation of the acceptance of the physician's assistant clinic by the community. This model is described in depth in the next chapter.

Summary

This chapter has presented a review of literature of research to date concerning physician's assistants and health care services utilization. It was documented there is a need for research which

focuses on the factors which influence the utilization of physician's assistants. In addition, many models or explanations of health services utilization have appeared in the last decade. Some have simplistic unicausal explanations; others have developed multifactor indices and scales for purposes of explanation. The Andersen-Newman model of health service utilization provides a framework for the interpretation of data such as those collected in the research county health surveys. It is the major framework for data interpretation. The next chapter will further define the Andersen-Newman model and explain its applicability to this research.

CHAPTER III CONCEPTUAL FRAMEWORK

Introduction

"Existing research concerning the physician's assistant can be characterized as fragmented" (Ford, 1975, p. 16). The literature review contained in Chapter II demonstrates the fragmentation. Ford further states these fragments will only become of value to the understanding of the physician's assistant when they are drawn together. Research concerning the physician's assistant is shown to typically involve separate aspects of the physician's assistant such as his training, his legality, his tasks and functions, and his evaluation. The research is also a fragment of a holistic analysis of the physician's assistant. The goal of this research is to describe the process of testing whether a physician's assistant clinic is a viable alternative to traditional primary health care. The acceptance of the physician's assistant is one of the missing research fragments and the one to which this research addresses itself. It is necessary to utilize existing theoretical models to give meaning to the analysis of the sociological problem. The physician's assistant as a self-contained role has not been the topic of any research. The physician's assistant has, in its brief history, been the subject of topical research endeavors.

To strengthen the interpretation of the survey data, which are the basis of this research, a model of health service utilization was employed. It was assumed that the factors which have been shown to

influence the utilization of transitional health services would also be the factors which would influence the utilization of a new health service. A description of the variables is contained in this chapter.

Approaches to Health Services Utilization Analysis

The evaluation of the utilization of a new medical care service has many stages and approaches. Andersen (1973) has classified these approaches into the following:

- 1) Sociocultural Approach. This approach incorporates the perspective that health service organization and utilization are related to complex societal and cultural norms and values.
- 2) Sociodemographic Approach. This approach emphasizes population based characteristics for explaining variations in utilization.
- 3) Social-Psychological Approach. This approach seeks to explain processes by which individuals realize that they are ill and decide on a source of medical care.
- 4) Organization Approach. This approach tends to examine differences in utilization as a result of the structure of the delivery system.
- 5) Social Systems Approach. This approach attempts to examine utilization as a function of interactions of interrelated components with one another and the population at large.

Each approach tends to examine a set of variables and their relationship to utilization of health care services. It is not the intention of this research to describe these approaches in detail, listing the

advantages and disadvantages of each. A discussion, however, of the social systems approach and its applicability to this study is presented. It is necessary that the approach used in examining health service utilization be clearly related to the study objective. Though each approach may be considered distinct, the variables incorporated in a specific model may not be unique to that model alone, as is the case of the social systems model. Instead, variables should be selected for analysis because they are consistent with the approach and that in turn will satisfy the research objectives.

The evaluation of health care is a new and complex area of investigation. Historically, the evaluation of health care has been limited to professional peer review. Hollingshead (1973, p. 540) states, "Evaluation of health care by a process more objective than peer review is indicated but, while the voice of the consumer is being raised about cost and quality of health care, sociologists have given little attention to the murmurings of the populace." Through the utilization of both survey research and observation methodologies, this dissertation measures the impact of the new, emerging health-care provider, the physician's assistant, on a rural community by measuring and interpreting the murmurings of the populace. Although sociological methods are in a constant state of growth and development, this dissertation is the first analysis and discussion of the impact of the physician's assistant based on these methods. It uses the social systems model of health service utilization as its theoretical foundation.

The Andersen-Newman Model

Andersen and Newman (1973) have developed a theoretical framework concerning societal and individual determinants of medical care

utilization in the United States. Figure 1 schematically presents their framework.

The Andersen-Newman model is based upon the analysis of the main components of the framework and their relationships to each other. The major premises of the model are: 1) societal determinants affect individual determinants directly and also through the service system, and 2) individual determinants influence the health services consumed by the individual. The second premise of the model, individual determinants of health service utilization, has the same variables for analysis as those collected in this survey. As such, this model groups the survey data into theoretically interpretable categories that influence health service utilization.

Individual characteristics of the population affect the health care they receive. The model suggests that health service use is dependent on: 1) the predisposition of the individual to use services (predisposing), 2) his ability to secure services (enabling), and 3) his illness level.

Because of the limited scope of the survey data, the societal determinant component of the model cannot be validated and analyzed. Thus, this research focuses on the health service system, the individual determinants, and the health service utilization components of the model. Figure 2, "Model of Health Care Utilization", depicts the segment of the Andersen-Newman model used in the analysis.

The predisposing variables illustrate that individual characteristics prior to the onset of illness are related to use. For example, people in different age groups have various types and amounts of illness and, therefore, different patterns of utilization. The enabling

SOCIETAL DETERMINANTS

HEALTH SERVICE SYSTEM

Technology
Norms

Resources
Organizations

INDIVIDUAL
DETERMINANTS

Predisposing
Enabling
Illness Level

HEALTH SERVICES
UTILIZATION

Type
Purpose
Unit of Analysis

FIGURE 1

Andersen-Newman Model

of Determinants of Health-Care Utilization

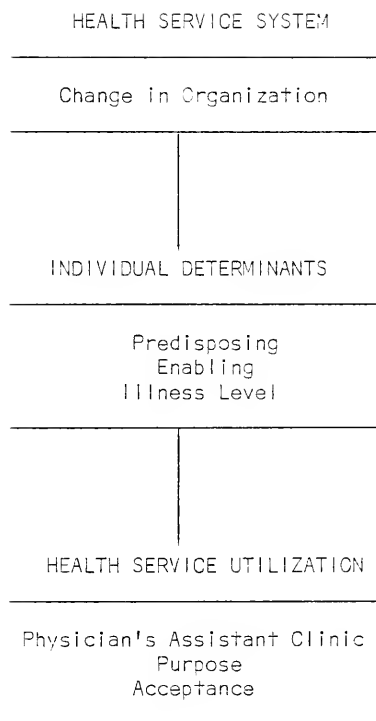


FIGURE 2

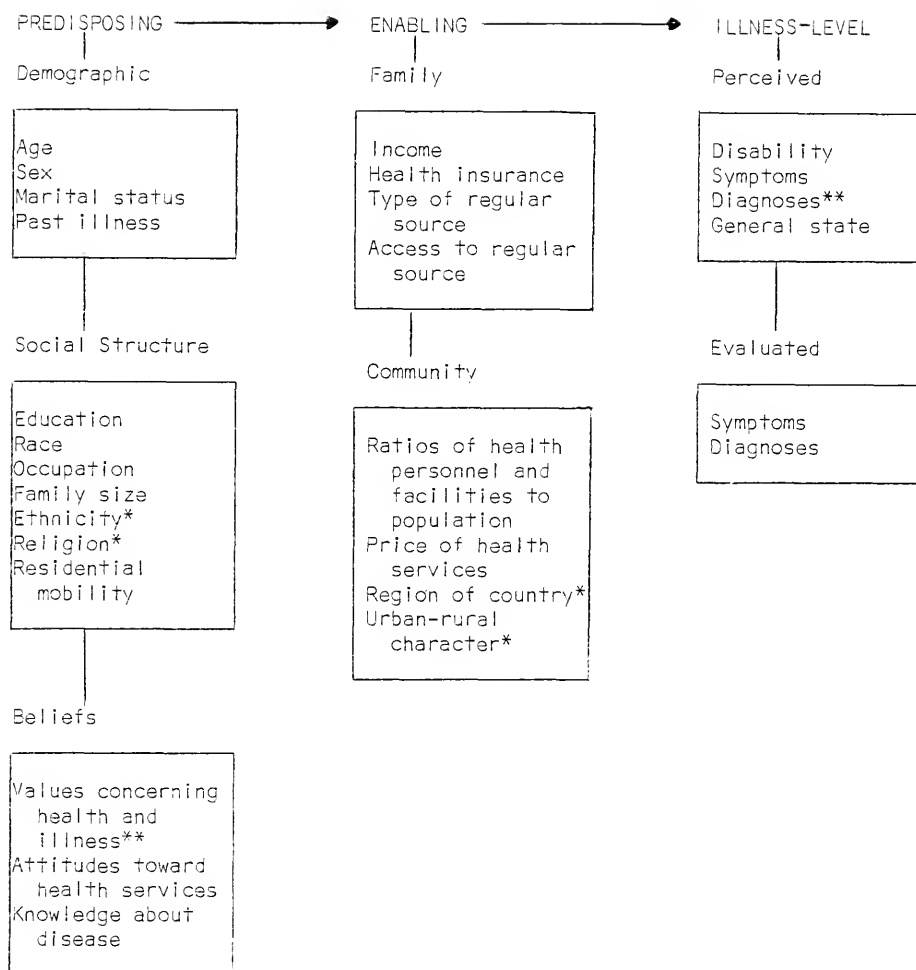
Model of Determinants of Health-Care Utilization

variables relate to the means available to use services. Health insurance coverage is a primary enabling variable since it permits an individual to act on a value or need concerning use. Illness-level variables represent the most direct cause of utilization. Given that predisposing and enabling variables are favorable, there must be the perception by the individual of illness or the possibility of its occurrence to motivate use. The nature and extent of the care, once illness is perceived, is partly determined by the service providers.

Andersen and Newman have developed some tentative generalizations based upon review of the literature and their own experience concerning the relative importance of each set of variables in predicting utilization. Illness level is seen to be the major determinant in predicting utilization, followed by demographic, family resource, and social structure variables. Figure 3 presents these variables schematically.

The Andersen-Newman model has been tested on survey data from the National Opinion Research Center. Their research findings suggest, from a theoretical perspective, this model has taken into consideration the primary determinants of health services utilization to the degree that the need for explanatory variables is minimal (Andersen and Newman, 1973, p. 108).

The Andersen-Newman model, however, does not directly take into account the reality of no medical services directly available in the community. They do consider the ratio of health personnel to the population as a community variable, but, if the ratio is zero as it was in the research county before the opening of the physician's assistant clinic, then perhaps the effect of no available health-care services is understated.



* Not available directly from survey, but due to the relative homogeneity of the community they can be assumed as constants.

** Not available from survey.

FIGURE 3

The Andersen-Newman Model:

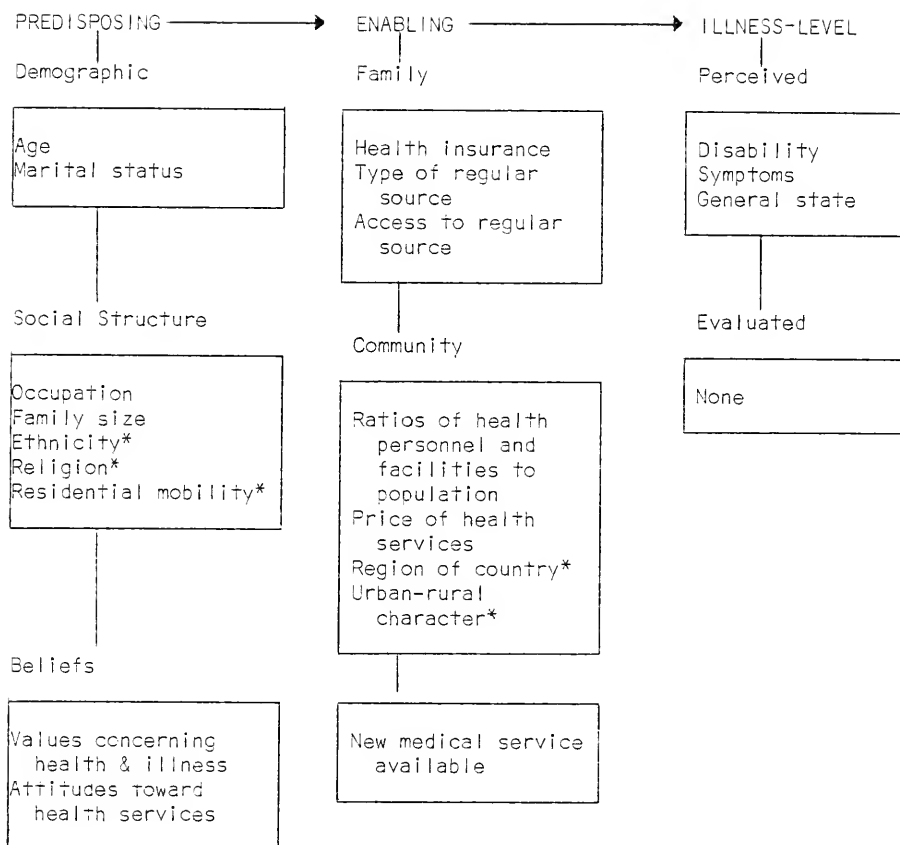
Determinants of Health Service Utilization

The model used in this research added the existence-nonexistence of medical care services as a distinct variable in the enabling category. The result modified the Andersen-Newman model, but this modification did not dramatically change the model. The model was further validated by contrasting changes in these variables by actual family utilization of the new health-care service. Figure 4 presents the modified Andersen-Newman model.

Summary

The goal of this chapter was to develop a conceptual model for the analysis of the physician's assistant clinic. The purpose of this study is the description of the evaluation, acceptance, and utilization of the physician's assistant clinic by the community. The socioanthropologic overview presented in the previous chapter suggested that even though the community appears geographically isolated, it has a history of dependence on its neighboring communities for social, economic, education, religious, and health needs.

The outcome of this research should describe the determinants, predisposing, enabling, or illness-level variables, which have been affected by the use of the physician's assistant clinic. The outcome should also describe which factors demonstrate the ability of the community to adapt its existing pattern of health service utilization in a manner which suggests the acceptance of the physician's assistant clinic as a viable mode of health-care delivery. Furthermore, the outcome should describe the level of acceptance of the clinic by demonstrating what factors made some individuals utilizers of the physician's assistant clinic while others remained nonutilizers or selective utilizers.



* not available directly from survey, but due to the relative homogeneity of the community they can be assumed as constants.

FIGURE 4

The Modified Andersen-Newman Model:
Determinants of Health Service Utilization

Given these questions which guided this research, the available survey data, and the descriptive nature of this study, this chapter has outlined a model of health service utilization which has optimal conceptual features for later data analysis. The next chapter discusses in detail the research design, the research questions, the methodology, and the variables and statistics used in the analysis.

CHAPTER IV RESEARCH METHODOLOGY

Design

As noted previously, the purpose of this research is to address two issues: 1) is the physician's assistant a viable alternative to the traditional health-care provider; and 2) is the physician's assistant accepted as legitimate by the consumers being served? The level of acceptance is measured by the utilization of the clinic by the community. In order to accomplish these research objectives, a two-stage survey obtained data along three dimensions: health perception, health attitudes, and health care service utilization. The data collection instruments used in the first stage were developed by health planners at a state university medical center; the second were developed by the author in collaboration with sociologists and health planners. Data from these sources include measures of self-perception of health, attitudes about health and health care, and, finally, health care utilization patterns.

The data have certain limitations. Neither of the survey instruments contained previously tested scales or indices of health care utilization and further, the data did not contain any health care outcome measures usually found in health services studies. The first data obtained were to be used as descriptions of behavior and attitudinal factors that affected the utilization of the physician's assistant clinic. The original health planners did not view this research

in a theoretical sense; their perspective was immediate and practical. After the first health survey was completed, a broader, more theoretical orientation emerged; it focused on the concerns and questions dealing with more generic issues, e.g., the legitimacy and acceptance of the new health care provider and his clinic. It was at this point that the author became involved.

Data Collection

The data were collected from two waves of survey interviews and from a six-month observation period at the offices which housed the newly opened physician's assistant clinic. The first interviews were administered two months before the clinic opened; the second were administered after fourteen months of operation. The observation was undertaken about one year after the clinic had commenced services. Table 1 shows the data-collection timetable.

TABLE 1

Timetable for Data Collection for Impact
of Physician's Assistant Clinic Study

	Spring 1971	Summer 1971	Fall 1971	Winter 1972	Spring 1972	Summer 1972
Wave I Survey	_____					
Clinic Operating		_____	_____	_____	_____	_____
Wave II Survey						_____

The Sample

The health planners decided that the research questions could be answered most effectively by the adult female in each household who was typically responsible for the health care of her family. Usually, in a nuclear family, this person is the mother. A purposive sample of one-third

of the households in the county was chosen. The sample size was based on the following logic. Since the population of the county was 3,551 and the average American family has approximately four members, it was estimated there were about 900 households in the county. Thus, a sample of one-third of the households, or 300 families, was the sampling objective for the first survey. Since over 85 per cent of the adults in the county were registered to vote, the sample of households was drawn randomly from voter registration lists.

Immediately after the sample was collected, it was compared to the census characteristics of the county. It was determined that blacks were underrepresented by 3 percent. A quota sample of 3 percent was added to proportionately represent the blacks. A total of 227 family households was reached. Once located the adult female most responsible for the household was interviewed and asked to report on her own health perceptions and behaviors as well as those of her spouse, children, and other adults living in the same household. Data were not available which described the reasons that the sampling objective of 300 was not reached.

During the second survey wave, attempts were made to reinterview each of these 227 family households; 85 percent (193) were located and reinterviewed. Thirty-four first-year respondents were not able to be interviewed, five had died during the year, twenty-one had moved and the remaining eight were never home or refused an interview.

In order to determine if the administration of the first-wave interview had sensitized and biased the participants with regard to the physician's assistant clinic and influenced the utilization of the same, a comparison group of family households was added during the second wave. This group was selected using the same sampling technique.

Eighty-six households were interviewed. One family interview was incomplete and deleted. Comparisons were made between this group and the reinterviewed group. No differences were found with respect to clinic utilization and the sociodemographic variables. This finding meant that the first survey did not bias county residents with respect to clinic utilization. Further comparative analysis between these two groups was not undertaken. These 85 additional Wave II interviews were added to the sample when description of events that occurred within the past year are presented. Whenever changes in predisposing, enabling, and illness-level variables are presented only the responses of those females who participated in both interviews are used.

Field Test

After the second interview schedule was prepared, a field test was conducted, 6 interviews were completed. After the field test was analyzed, the schedule was critically reviewed. As a result, some minor revisions were made. No items were deleted or added.

The Data

The general question was: will the residents of a rural community accept and utilize the physician's assistant clinic? Responses to items collected during the interviews provide the independent, dependent, and control variables. Complete interview schedules are contained in Appendices A and B. There are six specific questions used to comprehensively address this general question. The first specific question was: who in the community will utilize the clinic? Items used to address this question were:

- 1) Age of respondent, classified into six intervals ten years apart beginning at age 15;

- 2) Marital status, categorized as single, married, widowed, and separated/divorced;
- 3) Occupation of the male head-of-the-household (an indicator of socio-economic status). The U. S. Census categories were collapsed to reflect a rural community. The first category contains all professional and white collar workers; the second, craftsmen and foreman; the third, operatives; the fourth, laborers; and the fifth, farmers;
- 4) Family composition, categorized as nuclear complete, living with relatives, and living alone;
- 5) Distance of the household to the clinic, measured in miles, but collapsed into three categories: within the county seat, within ten miles of the county seat, and other;
- 6) Welfare recipient during the year, categorized as yes or no;
- 7) Health insurance status, insured or not; and,
- 8) Length of residence in the county.

Although data were collected about respondent's education, race, and residential mobility, they were not used in the analyses due to their lack of discriminatory ability. The county was assumed to be a priori homogeneous with respect to ethnicity and religion. Data concerning ethnicity and religion were not collected. These characteristics of the research county were descriptively clarified in Chapter I.

The second specific question was: for what illnesses or injuries will the county residents utilize the clinic? The items that address

this question are the above items plus questions concerning the health-seeking behaviors for other service modes, namely physicians, hospitals, and other health services.

The third question was: will the community residents continue to utilize the clinic over time? The items that address this question are clinic utilization and health behavior change variables. Clinic utilization was defined as use of the clinic during the year by the respondent or a member of the respondent's nuclear family. New variables were created to show change from Wave I to Wave II. These change variables compare the responses between the two survey waves. For example, if the perception of the level of worrying was lower during the second wave than it was during the first, that was considered a positive change. If the worry was higher in the second wave than in the first, that was considered a negative change. If no change was detected between the two surveys, that variable was scored as stable. This type of variable creation permitted testing of the significance of change by means of a sign test. Since the data were ordinal level, a variable that quantified the magnitude of the change would be erroneous. A change variable was created for each item that measured health behavior or health attitude:

- 1) Perception of state of health;
- 2) Perception of health interference with daily activities;
- 3) Perception of receiving enough medical care;
- 4) General worry;
- 5) Worry about receiving emergency medical services;
- 6) Worry about having an undetected disease.

The fourth question was: will the clinic be compared favorably to other health-care services received? Four questions comparing the physician's assistant clinic to other health-care agencies were asked. The comparison questions were in regard to:

- 1) Cost;
- 2) Perceived quality of care;
- 3) Ease in making appointments; and,
- 4) Ease in talking to clinic staff;

and are shown in the Wave II precoded interview schedule in Appendix B. The possible responses to these questions were "the clinic was better or easier than the other health-care service," "it was about the same as the other health care service," and "it was worse or harder than the other health care service."

Nonutilizers of the clinic typically would not respond to the comparison questions and those who did generally indicated they were relying on hearsay information. Thus, their responses were not analyzed.

The fifth question was: will utilization of the clinic affect the health-seeking and utilization behaviors of those in the community? The items that address this question are changes in health-related behaviors and attitudes as measured by changes in enabling and illness-level variables. These include changes in physician visits, clinic visits, and medicine intake. The items show health-related behavior were:

- 1) Health interference with daily activities;
- 2) Previous medical-care utilization;
- 3) Present health-care utilization; and,
- 4) Stated prospective utilization of the physician's assistant clinic.

The items that show health attitudes were:

- 1) Self-report of perception of state of health;
- 2) Worry as measured by response to the question, "How often are you worried or nervous?";
- 3) Worry about emergency health care determined by response to the question, "How often do you worry about being able to receive health-care services for an emergency?";
- 4) Worry about personal health determined by response to the question, "How often do you worry about having an illness or disease that has not been detected?";
- 5) Self-report of perception of receiving enough medical care;
- 6) The respondent's and the community's liking of the clinic.

The sixth question: will the clinic be utilized by all segments of the community?; was addressed by the development of discriminant functions on utilizers and nonutilizers. These functions contain the variables which had demonstrated significance.

Reliability and Validity

Reliability and validity must be addressed in all surveys. A brief review of reliability in this research will be discussed. Reliability refers to the consistency of the measures over time. Three types of reliability were applicable to the survey data: observer reliability, internal reliability, and, for longitudinal and multistage studies, test-retest reliability. Experiment observer reliability was demonstrated by means of a controlled simulation. In this experiment, both interviewers recorded answers to survey questionnaires while observing a simulated interview. The answers of the interviewers were compared. The average agreement was calculated by dividing the number of correct

responses by the total number of questions and dividing by two, the number of interviews. The average agreement was 92 percent. Since there were only two interviewers in Wave II, a further statistical procedure was unnecessary. No observer reliability experiment was performed for Wave I.

Other tests of reliability that are frequently used in survey research are tests to measure the internal consistency and tests to measure estimate of test-retest reliability. Reliability tests for internal consistency and test-retest reliability were not performed on the crucial health related variables. Tests for these types of reliability were performed for the predisposing, sociodemographic variables. Because there was no logical inconsistencies overtime for these variables, reliability was assumed.

Validity refers to the ability of an item to measure what it is intended to measure. Content validity was addressed in this research by having the survey instruments reviewed by other researchers and then field tested. The results determined if questions were ambiguous and potentially low in content validity. It was also believed that the health interview used in this research would not be perceived by the respondents as personally damaging or threatening to the degree that they would give inaccurate responses. The interview was assumed to have face validity.

There are other issues concerning the validity of the data. The history of health surveys, however, shows that if the limits are recognized a priori, health surveys, such as the one utilized in this research, are meaningful indicators of health-service utilization. There

was no way to test the validity of the responses. Theoretically, it would be possible to calculate the validity of some of the survey items by comparing health utilization responses, with medical records or health insurance claims. These comparisons, however, were not available for this research.

Statistics

The descriptive analysis was performed by utilizing contingency table statistics. The most prevalently used were Chi-square, sign test, and Gamma. As an attempt to reinforce the descriptive findings of the impact of the clinic on the county and for future program planning, clinic utilization was also analyzed by means of discriminant function analysis. The discussion of this analysis is presented in the following chapter.

Summary

This chapter has outlined the design and methodology used in this research. The design was a two-stage health survey of adult females presumed to be most knowledgeable of their family's health needs and behaviors. A purposive sample of 193 respondents representing approximately one third of the households in the county was selected. The sample was asked questions concerning their own health perceptions and utilization behaviors. They were also asked to be informants for the health perceptions and utilization behaviors of other members of their families. The items and statistics used in the analyses were described and a discussion of the issues of reliability and validity was presented.

Chapters I, II and III have described the conceptual issues of the research and have grouped these issues with relevant research literature and the research questions. These factors have led to a discussion of

an analytical framework with which the issues of the research can be addressed. This chapter has presented the methodological tools used within the framework. The following chapter presents the culmination of these four chapters by presenting the research findings.

CHAPTER V FINDINGS

Overview

Chapter I presented a number of questions that had guided this research. These questions are not formal but are used for the purpose of interpreting the findings. The findings are reported as responses to these questions. The major research question was: will the residents of the county utilize and accept the physician's assistant clinic? To address this question, six specific questions are needed.

- 1) Who in the community will utilize the clinic?
- 2) For what illnesses or injuries will they utilize the clinic?
- 3) Will they continue to utilize the clinic over time?
- 4) Will the clinic be compared favorably to other health-care services received?
- 5) Will utilization of the clinic affect the health seeking and utilization behaviors of those in the community?
- 6) Will the clinic be utilized by all segments of the community?

Before these questions are addressed in detail, a review of the technique for measuring changes-over-time and a discussion of the survey results are presented.

It was noted in the previous section that only some of the illness-level items changed between the survey waves. It would be simplistic to

state that the changes in illness-level variables were due solely to the opening of the physician's assistant clinic. Even in a rural, stable community like the research county, other factors not measured in this research could have caused the changes to occur. Variables that captured these changes were needed. As described in Chapter IV, by summarizing and creating new variables from the survey data, the needed change variables were developed.

These variables were then crosstabulated by whether or not an individual within the family had utilized the physician's assistant clinic. Thus, the two comparison groups are utilizers and nonutilizers of the clinic. The data were then compared to determine if, according to the specific illness-level variable, the utilizers and nonutilizers of the clinic were independent. Sign tests were calculated for the changes in both groups. Since each group, the utilizers and nonutilizers, had equal opportunity for change, the sign change would determine which group changed more significantly. Table 2 presents the general format for the presentation of these data.

TABLE 2

General Format
Change in Predisposing, Enabling, and Illness-
Level Variables as a Function of Utilization of the
Physician's Assistant Clinic

	Family Utilized Clinic	Family Not Utilized Clinic
Change in Variables	Positive change No change Negative change	Positive change No change Negative change

In the preceding chapter, the sample design was discussed; a brief review is needed. When change variables are presented, the maximum N is 193. These are respondents who participated in both surveys. When data are presented that do not involve change, the maximum N is 278, the 193 who responded to both surveys plus the additional group of 85. Table N's may fall below these totals because of missing responses.

Descriptive Survey Results

The results of each survey are compared and discussed within the Andersen-Newman Framework.

Predisposing variables. Table 3 depicts the predisposing characteristics of the sample for both survey waves. It can be quickly ascertained that the respondents who are missing from the Wave II survey do not affect the sample characteristics. With respect to the predisposing variables, changes were nonexistent from Wave I to Wave II. This table shows that the sample were primarily white, married, high school graduates who were living in nuclear, complete families within the county for more than twenty years. The respondents have reported themselves to be rural, stable and family oriented. More importantly the sample remained the same with respect to these variables over the year's time.

Approximately, 9 percent reported they or their immediate families had received some type of welfare during the past year, 90 percent reported they own at least one car and 60 percent reported ownership of two or more cars and/or trucks. Data on income were collected but determined that farmers, some small business owners, and other self-employed individuals were reporting only net income, the amount remaining after business costs and depreciations were deducted. Others reported

TABLE 3

Wave I and Wave II Survey Comparisons of
Predisposing Sample Characteristics
(Percentages)

	<u>Wave I Survey</u>	<u>Wave II Survey</u>
<u>Age</u>		
< 35	16	16
35 to 64	62	62
≥ 65	22	22
<u>Race</u>		
White	92	94
Black	8	6
<u>Marital Status</u>		
Married	79	77
Single	4	2
Widowed	14	18
Separated or Divorced	3	3
<u>Living Arrangement</u>		
Nuclear Complete	70	70
Nuclear Incomplete	23	21
Alone	7	9
<u>Length of Time Residing in Gilchrist County</u>		
More than 20 Years	67	70
5 to 20 Years	21	19
Less than 5 Years	12	11
<u>Education</u>		
Less than High School Graduate	63	62
High School Graduate	33	37
College Graduate	4	1
N	227	193

gross incomes. No clear, reliable method of making the amounts comparable could be ascertained. Income, as a key variable, was deleted from further analysis.

Enabling variables. Table 4 presents a listing of these variables. These health behaviors have remained constant between the two survey waves. There are, however, two interesting findings. The first is that both before and after the clinic opened, 80 percent of the sample had seen a physician. This clearly suggests that the county residents were already high users of health-care services, and that the opening of a new health-care service did not radically alter this high health-care service rate. The second interesting finding was that the use of patent medicines increased between the survey waves. When this finding was controlled for clinic utilization, no significant difference was found. One explanation is that the Wave II interviewers probably explained more precisely what was meant by patent medicines than did the interviewers in the Wave I survey.

Illness-level variables. Table 5 presents the illness-level variables. The respondents were asked several questions concerning their attitudes and perceptions of their state of health as well as their worry about receiving care. No significant differences were observed between the two survey waves. There are two interesting findings. In Wave II, the perception of receiving enough medical care increased by 13 percent. Secondly, worry about receiving health-care services in an emergency declined in the "often" and "all the time" categories 17 percent, from 28 percent in Wave I to 11 percent in Wave II. These findings suggest that there has been some impact of the physician's assistant clinic. The impact is presented more completely in the next section.

TABLE 4

Wave I and Wave II Survey Comparisons of
Enabling, Health Behavior Variables
(Percentages)

	Wave I	Wave II
<u>Saw A Physician</u>		
Yes	80	80
No	20	20
<u>Mean Number of Physician Visits</u>	4	4.5
<u>Hospitalized</u>		
Yes	10.5	9.5
No	89.5	90.5
<u>Took Prescription Drug During Year</u>		
Yes	43	50
No	57	50
<u>Used Patent Medicine During Year</u>		
Yes	19	47
No	81	53
<u>Used a "Nerve Pill"</u>		
<u>During Year</u>		
Yes	16	25
No	84	75
<u>Women had Pap Test</u>		
Yes	44	40
No	56	60
<u>Pregnant</u>		
Yes	5	5
No	95	95
N	227	193

TABLE 5
Wave I and Wave II Survey Comparisons of
Illness-Level Variables
(Percentages)

	Wave I	Wave II
<u>Perceived State of Health</u>		
Good & excellent	63	71
Fair	21	18
Poor and very poor	16	11
<u>Perceived Health Interference with Daily Activity</u>		
Never	50	56
Seldom	12	16
Sometimes	17	6
Often	11	13
All the time	10	9
<u>Perceived Receiving Enough Medical Care</u>		
Yes	71	84
No	29	16
<u>Worry</u>		
<u>General</u>		
Never	10	10
Seldom	21	19
Sometimes	30	42
Often	39	30
<u>Receiving Health Care Services in an Emergency</u>		
Never	47	58
Occasionally	25	31
Often	25	7
All the Time	3	4
<u>Have Undetected Disease</u>		
Never	67	66
Occasionally	23	29
Often and All the Time	10	5

N

227

193

Tables 3 and 4 presented a comparison by survey wave of predisposing and enabling variables. These figures show the predisposing variables and the enabling variables show no dramatic change. Table 5 presented some changes that occurred after the physician's assistant clinic opened for illness-level variables. Fewer persons perceived themselves to be in poor health and fewer reported that their health interfered with their daily activities. A smaller percentage of the respondents were as worried about receiving medical care in an emergency than during the previous year. Hospitalization and visits to physicians appeared to be the same. Medicine intake, patent medicine, prescription drugs, and nerve pills had all increased during the year.

The next section more closely examines these changes by analyzing the differences in the illness-level variables as a function of family utilization of the clinic. This analysis provides answers to the research questions.

Discussion of the Six Specific Questions

The first specific question is: who in the community utilizes the clinic? Two predisposing variables, age of respondent and occupation of male head-of-household, are discussed. Tables 6 shows clinic utilization by occupation of male head-of-household, a predisposing variable. There is a significant difference between the utilizers and nonutilizers. The ability to predict utilization by occupation, however, is minimal, $\Lambda = .10$. Additional analysis showed that of those who reported they liked the clinic a great deal, 46 percent were white-collar workers, 23 percent were farmers, 16 percent were craftsmen, 7 percent were operatives, and 8 percent were laborers. Even though the professional and white-collar workers indicate a greater liking for the

TABLE 6
Clinic Utilization by Occupation
of Male Head-Of-Household

Occupation	Clinic Utilization				Row Total
	No	%	Yes	%	
Professional and White Collar	8	(12)	36	(40)	44
Craftsmen Foremen	13	(20)	17	(19)	35
Clerical Operations	13	(20)	9	(10)	22
Sales Laborers	8	(12)	7	(8)	15
Crafts Farmers	20	(29)	20	(23)	40
Total	67		39		156

Chi-square = 15.85 Significant $p < .01$ d.f. = 4

physician's assistant clinic, their utilization is not significantly different from other occupational groups. Additional analysis revealed there was no utilization difference between those who liked the clinic a great deal and those who liked the clinic somewhat.

Table 7 presents clinic utilization by age. Age was not a significant factor in clinic utilization. In fact, the percentages of utilizers and nonutilizers in each age group are almost equal.

As further explication of this utilization question, the idea that heavy utilizers and needers of health-care services would be more prone to use the clinic was analyzed. No attempt was made to develop a profile of needs assessment for the research county. Health needs for this analysis are defined as health-seeking behavior. Since 80 percent of the sample had sought health care before the clinic had opened, it was assumed these individuals viewed themselves as having a need for health services. It was established from the survey that the majority of respondents perceived they were or had been receiving enough medical care. Because the health-care needs of the research county were already perceived as met, the clinic would then have to replace existing providers or create a new demand for services. In order for the residents of the county to substitute clinic services for existing services, the clinic would have to become an accepted, viable, and preferred provider of health-care services.

Table 8 presents clinic utilization by family physician visits. The significant Chi-square is interpreted to mean that the utilizers and nonutilizers are independent groups but, more importantly, the Gamma of .39 implies there is a moderate association between more

TABLE 7
Clinic Utilization by Respondent's Age

Age of	Clinic Utilization				Row Total
	No	%	Yes	%	
15-24	4	(3)	4	(3)	8
25-34	18	(13)	18	(13)	36
35-44	29	(21)	32	(23)	61
45-54	32	(23)	29	(20)	61
55-64	26	(19)	25	(18)	51
Over 65	29	(21)	32	(23)	61
Total	138		140		278

Chi-square = 1.054 Not significant d.f. = 5

TABLE 3
Clinic Utilization by
Family Physician Visits

Family Physician Visits	Clinic Utilization				Row Total
	No	%	Yes	%	
None	49	(42)	20	(18)	69
1-5	44	(38)	50	(46)	94
6-10	11	(9)	18	(16)	29
More than 10	13	(11)	22	(20)	35
Total	117		110		227

Chi-square = 16.375 Significant $p = .001$ d.f. = 3

physician visits and clinic utilization. This suggests the more individuals use health-care services, the more likely they will utilize the physician's assistant clinic.

Table 9 adds a caution to this interpretation. This table presents family physician visits by prospective clinic utilization. The significant Chi-square suggests that prospective utilization plans are independent of family physician visits. The Gamma of $-.25$ further suggests that the greater the number of physician visits the lower the prospective clinic utilization, and, further the data indicate that the more visits to a physician a family has, the more likely it is they do not plan to use the clinic. Other survey data verified this implication in that only eight of the respondents reported that a physician ever referred them to the physician's assistant clinic. It may be that the physicians who treat the residents of the research county do not want to lose patients or perhaps these physicians have not accepted the physician's assistant clinic as a viable alternative for health-care delivery.

The second specific question is: for what reasons do the individuals utilize the clinic? The respondents who had utilized the clinic answered that physicals, checkups, and colds were the reasons they had gone to the clinic. These responses are not specific enough to address the research question. It was decided this question could be addressed by examining the changes in certain health factors of the utilizers and nonutilizers. Table 10 shows there was not significant difference for the utilizers and nonutilizers of the clinic with respect to change in perceived state of health. The sign test, however, suggests the change among the utilizers had a significantly greater

TABLE 9

Family Physician Visits by
Prospective Clinic Utilization

Prospective Utilization	Family Physician Visits								Row Total
	None		1-5		6-10		More than 10		
		%		%		%		%	
All Services	15	(46)	22	(25)	5	(18)	3	(9)	45
Some Services	11	(33)	39	(44)	15	(53)	19	(56)	84
Emergency Only or Not at All	7	(21)	28	(31)	8	(29)	12	(35)	55
Total	33		89		28		34		184

Chi-square = 13.428 Significant $p < .05$ d.f. = 6
Gamma = -.25

TABLE 10

Change in Perception of State of Health,
Preclinic, Postclinic Opening Controlled
for Clinic Utilization

Perceived State of Health	Clinic Utilization				Row Total
	No	%	Yes	%	
Better State of Health	26	(31)	41	(37)	67
Same State of Health	39	(47)	48	(44)	87
Worse State of Health	18	(22)	21	(19)	39
Total	83		110		193

Chi-square = .74 Not significant d.f. = 2

Sign test

nonutilizers	Z = 1.21	accept null hypothesis	p = .05
utilizers	Z = 2.25	reject null hypothesis	p = .05
overall	Z = 2.719	reject null hypothesis	p = .05

probability to be positive. Table 11 demonstrates that the perception of health interfering with daily activities was different between utilizers and nonutilizers. The sign test reports the change for nonutilizers had a significantly greater probability towards more interference. Table 12 shows that perception of receiving enough medical care did not differ between utilizers and nonutilizers by family clinic-participation. The sign tests indicate the probability for change among both groups was toward a perception of receiving more care during the second year than during the first year. The difference is substantially significant.

Table 13 shows there was no difference in general worry by clinic utilization. The sign test indicates the probability for change among both clinic utilizers and nonutilizers was toward less worry. Table 14 shows that there was a significant difference in worry about receiving emergency medical-care services. The sign test further clarifies the utilizers had a significantly greater probability to be less worried about receiving emergency medical-care services. Although there was some change in worry among the nonutilizers, the probability of the change being either positive or negative appeared equal and random. Table 15, more clearly shows that utilization of the clinic may have affected specific worry. This table presents the change in worry about having an undetected disease. The sign test indicates the changes between groups is inverse. The nonutilizers had a significantly greater probability toward more worry than the utilizers.

TABLE II

Change in Perception of Health Interference
with Daily Activities, Preclinic, Postclinic
Opening Controlled for Clinic Utilization

Perception of Health Interference	Clinic Utilization				Row Total
	No	%	Yes	%	
Less Interference	15	(18)	29	(26)	50
Same Interference	28	(34)	52	(48)	92
More Interference	40	(48)	29	(26)	85
Total	117		110		227

Chi-square = 9.85 Significance $p < .01$ d.f. = 2

Sign test

nonutilizers $Z = 3.37$ reject null hypothesis $p = .05$

utilizers $Z = 0$

overall $Z = 8.99$ reject null hypothesis $p = .05$

TABLE 12
 Change in Perception of Receiving
 Enough Care, Preclinic, Postclinic Opening
 Controlled for Clinic Utilization

Perception of Receiving Enough	Clinic Utilization				Row Total
	No	%	Yes	%	
More Care than First Year	13	(16)	24	(22)	37
Same Care as First Year	64	(78)	80	(73)	144
Less Care than First Year	5	(6)	5	(5)	10
Total	82		109		191

Chi-square = 1.23 Not significant d.f. = 2

Sign test

nonutilizers	Z = 1.88	reject null hypothesis	p = .05
utilizers	Z = 3.5	reject null hypothesis	p = .05
overall	Z = 3.9	reject null hypothesis	p = .05

TABLE 13

Change in Amount of General Worry, Preclinic, Postclinic
Opening Controlled for Clinic Utilization

General Worry	Clinic Utilization				Row Total
	No	%	Yes	%	
Less Worry	65	(78)	50	(69)	115
More Worry	18	(22)	22	(31)	40
Total	83		72		155

Chi-square = 1.59 Not significant d.f. = 1

Sign test

nonutilizer	Z = 4.94	reject null hypothesis	p = .05
utilizer	Z = 3.30	reject null hypothesis	p = .05
overall	Z = 6.83	reject null hypothesis	p = .05

TABLE 14

Change in Amount of Worry about Receiving Emergency
Medical Services, Preclinic, Postclinic Opening
Controlled for Clinic Utilization

Worry about Receiving Emergency Medical Services	Clinic Utilization				Row Total
	No	%	Yes	%	
Less Worry	18	(22)	50	(50)	68
Same Worry	43	(54)	46	(45)	89
More Worry	19	(24)	5	(5)	24
Total	80		101		181

Chi-square = 21.175 Significant $p < 0.001$ d.f. = 2

Sign test

nonutilizer	Z = -1.16	accept null hypothesis	p = .05
utilizer	Z = 6.06	reject null hypothesis	p = .05
overall	Z = 4.59	reject null hypothesis	p = .05

TABLE 15

Change in Amount of Worry about Having an
Undetected Disease, Preclinic, Postclinic
Opening Controlled for Clinic Utilization

Worry about Having an Undetected Disease	Clinic Utilization				Row Total
	No	%	Yes	%	
Less Worry	11	(14)	26	(25)	37
Same Worry	47	(60)	63	(61)	110
More Worry	21	(26)	14	(14)	35
Total	79		103		182

Chi-square = 6.761 Significance $p < .05$ d.f. = 2

Sign test

nonutilizer	Z = -1.77	reject null hypothesis	p = .05
utilizer	Z = 1.89	reject null hypothesis	p = .05
overall	Z = .23	accept null hypothesis	p = .05

Using bivariate contingency-table analysis and an extension of the binomial test showed that with regard to perceived state of health, health interference with daily activities, perception of receiving emergency medical care, and worry about having an undetected disease that there was an overall significantly positive change for the utilizers of the clinic. The utilization of the clinic demonstrates an inverse relationship with perception of worry about receiving emergency medical services. After a family utilized the clinic, there was a reduction of specific health-related worry.

The major reported reasons for clinic utilization were generic. The utilization, however, resulted in significant, positive changes in health perception and worry. Thus, it was shown that, in addition to direct health care, the utilizers of the clinic had more positive change in health-related perceptions.

The third specific question is: will the county residents continue to utilize the clinic over time? It addresses the continuance of prospective utilization of the clinic. The question in the Wave II survey which addressed prospective utilization is: "Would you go to the medical center in the county seat for all your health-care needs, some of your health-care needs, only in the case of an emergency, or not at all?" The respondents reported as follows: I would go to the clinic for all health-care needs (22 percent), some (46 percent), emergency only (22 percent), and not at all (10 percent). These figures raise additional questions. Is there a difference in prospective utilization if one has already utilized the clinic? Do differences in perceived quality of care result in a difference in prospective utilization? Both utilizers and nonutilizers stated that their

prospective utilization of the physician's assistant clinic would be for some of their medical care but not for all of it. These data suggest that the clinic will be utilized for some of the health-care needs of the community.

Table 16 presents utilization with respect to intended future utilization. The clinic utilizers are a significantly different group than the nonutilizers in regard to prospective utilization. The Chi-square is significant at $p < .05$. The ability to relate actual utilization from prospective utilization is moderately low with Gamma = .24. These data indicate a tendency. Once the clinic is actually utilized, the user is somewhat more likely to return to the clinic for some of his(her) health-care needs. Furthermore, those who used the clinic were quite satisfied with the care rendered. Of those utilizers who liked the clinic a great deal, 90 percent could not list anything they disliked. Consistently, those who utilized the clinic perceived both the cost and quality of care to be the same or better than their usual place of health-care services. Of those who intended to use the clinic for some or all of their health-care-service needs, 65 percent perceived the cost of services at the physician's assistant clinic to be less than the cost of services at their usual place of health-care services.

These findings suggest that some dissonance of acceptance or non-acceptance by the community of a nonlicensed primary health provider was resolved after a member of the family had utilized the clinic. The reason for the initial utilization could not be obtained from the survey data. After the utilization of the physician's assistant clinic the user probably felt more favorable about the clinic in that the user was more likely to continue to use the clinic for some of his health-care needs than the nonutilizers.

TABLE 16
 Clinic Utilization by
 Prospective Clinic Utilization

Prospective Utilization	Clinic Utilization				Row Total
	No	%	Yes	%	
All Services	9	(12)	36	(33)	45
Some Services	23	(31)	61	(56)	84
Emergency Only or Not at All	42	(57)	13	(11)	55
Total	74		110		184

Chi-square = 43.295 Significant $p < .05$ d.f. = 2
 Gamma = .24

A logical additional inquiry was made to determine if the perception of quality of care of clinic utilizers was an important factor in their decision for prospective utilization. It may be inferred from Table 17 that there was a difference of perceived quality of care at the clinic by planned future use of the clinic. Those who intended to utilize the clinic for some or all of their health-care-service needs appeared to perceive the clinic to be providing the same if not better quality of care than was otherwise available. Those who did not plan to use the clinic appeared to perceive the quality of care to be the same or worse than the quality of other care. Because so few responded that the care at the clinic was not as good as other providers and so few responded that they do not intend to use the clinic at all, it would be misleading to perform any statistical test on these data.

The idea that the health-care needs of the county were being met by the physician's assistant clinic can not be statistically supported with these data. There is an indication that those who have utilized the clinic will continue to. These data also lead to the speculation that the residents were perhaps rigidly entrenched in their previous patterns of health-care-services utilization and they did not perceive the need of the physician's assistant clinic for the major portion of their health-care-service needs. Table 18 presents the change in physician visits by clinic utilization. No differences were shown. It was thought that if there were more physician visits, then there would be lower clinic utilization. It was also thought that if clinic utilizers had an increase in physician visits, then the physician's assistant had identified patients to be referred to physicians for additional specialized treatments, thereby causing these patients' utilization rates of

TABLE 17

Perception of a Physician's Assistant
Clinic as Compared to Usual Care Received by
Prospective Physician's Assistant Clinic Utilization

Prospective Utilization	Perception of Care at Clinic Compared to Usual Care Received			Row Total
	Better	Same	Not Good	
All Care	8	30	0	38
Some Care	8	54	3	65
Emergency Care Only	1	5	3	9
Not at All	0	1	1	2
Total	17	90	7	114

TABLE 18

Change in Number of Physician Visits,
Preclinic, Postclinic Opening
Controlled for Clinic Utilization

Physician Visits	Clinic Utilization				Row Total
	No	%	Yes	%	
More MD Visits	15	(29)	16	(25)	38
Same MD Visits	20	(40)	27	(42)	47
Less MD Visits	16	(31)	22	(33)	31
Total	51		65		116

Chi-square = 2.78 Not significant d.f. = 2

Sign test

nonutilizer	Z = -.17	accept null hypothesis	p = .05
utilizer	Z = -.97	accept null hypothesis	p = .05
overall	Z = .84	accept null hypothesis	p = .05

physicians to increase. These arguments cannot be verified in the survey data. The point here is that the residents were already users of health services. The survey reported that 80 percent of the informants had utilized some type of health-care service before the clinic had opened. For a county with no health-care services, this is a high percentage. The clinic, then, should not be viewed as the only provider of primary care, it should be viewed as a more convenient alternative.

Table 19 presents change in hospitalization by clinic utilization. The utilizers and nonutilizers are shown to be independent groups. The nonutilizers, however, had a significantly greater probability for less hospitalization in Wave II than in Wave I. The change in hospitalization for utilizers was random. The idea then, that the physician's assistant clinic was functioning as a referral source, is speculative at best.

Table 20 presents change in utilization of prescription drugs. There was no difference between the utilizers and nonutilizers of the physician's assistant clinic nor was there any significant probability of the direction of change overall among the groups. As an indicator of preventive medical-care practice, data concerning Pap tests were collected in the surveys. Table 21 shows that there was no significant difference between the physician's assistant clinic utilizers in regard to consistently, yearly, having a Pap test. There was no significant probability of the direction of the change overall.

These findings regarding health-care utilization indicate there has been a minimal change which could be attributable to the utilization of the physician's assistant clinic. The reason the clinic had no dramatic affect on the health-seeking behaviors of the respondents during this

TABLE 19

Change in Amount of Hospitalization,
Preclinic, Postclinic Opening
Controlled for Clinic Utilization

Hospitalization	Clinic Utilization				Row Total
	No	%	Yes	%	
Less Hospitalization	39	(33)	11	(10)	50
Same Hospitalization	69	(59)	86	(78)	155
More Hospitalization	9	(8)	13	(12)	22
Total	117		110		227

Chi-square = 18.073 Significant $p < 0.001$ d.f. = 2

Sign test

nonutilizer	Z = 3.04	reject null hypothesis	p = .05
utilizer	Z = -.04	accept null hypothesis	p = .05
overall	Z = 2.62	reject null hypothesis	p = .05

TABLE 20

Change in Utilization of Prescription
Drugs, Preclinic, Postclinic
Opening Controlled for Clinic Utilization

Utilization of Prescription Drugs	Clinic Utilization				Row Total
	No	%	Yes	%	
Taking More Prescription Drugs	6	(7)	8	(7)	14
Taking Same Prescription Drugs	66	(80)	90	(82)	156
Taking Less Prescription Drugs	11	(13)	12	(11)	23
Total	83		110		193

Chi-square = .25 Not significant d.f. = 2

Sign test

nonutilizer	Z = 1.21	accept null hypothesis	p = .05
utilizer	Z = -.89	reject null hypothesis	p = .05
overall	Z = -1.48	accept null hypothesis	p = .05

TABLE 21
 Change in Having Pap Test,
 Preclinic, Postclinic
 Opening Controlled for Clinic Utilization

Having Pap Test	Clinic Utilization				Row Total
	No	%	Yes	%	
Had Pap Test Second Year, Not First	12	(15)	9	(8)	21
No Change	60	(72)	85	(77)	145
Had Pap Test First Year, Not Second	11	(13)	16	(15)	27
Total	83		110		193

Chi-square = 1.93 Not significant d.f. = 2

Sign test

nonutilizer	Z = .21	accept null hypothesis	p = .05
utilizer	Z = -1.40	accept null hypothesis	p = .05
overall	Z = .86	accept null hypothesis	p = .05

research time-frame may be due to the already high health service utilization.

The sixth question is: will the clinic be utilized by all segments of the county? The method for addressing this question is to use the findings thus far reported to make explicit and test a model of clinic utilization with each wave of survey data. The rationale for this analysis was to attempt a multifactor description of acceptance by the county of the physician's assistant clinic. It was also desired to determine if the collected descriptive data could be interpreted meaningfully by a multivariate statistical technique. Because there are two survey waves, answers to questions regarding who is more likely to use a new health-care service before and after it was available could be determined and the results then compared. If there are significant differences in the characteristics of these two groups, the results would be of interest to health-care planners and policy makers.

To this point, the analysis has used bivariate contingency table statistics. Several variables, however, have been shown to affect utilization of the physician's assistant clinic. They were perceived state of health, perceived health interference with daily activity, worry about receiving health care in an emergency, utilization of prescription drugs, family utilization of physician services, perception of receiving enough medical care, occupation of the male head-of-household, and prospective utilization of the physician's assistant clinic. The interaction between these variables has not been explored. A multivariate analysis was undertaken to determine if these variables together would influence physician's assistant clinic utilization.

The multivariate technique chosen was discriminant analysis. The purpose of this analysis was to determine if certain items or factors could predict and classify who would utilize the clinic. Several utilization models were discussed in Chapter II. These models focus on current utilizers of medical services and their illness symptoms. Andersen and Newman state, "The Model should also serve as a guide in the selection of relevant variables to include in the analysis" (1973, p. 106).

The objective of discriminant analysis is to develop one or more functions from a given set of variables which will discriminate between members of the various groups. Discriminant analysis derives the function by maximizing the between group differences and minimizing the within group variances. The two groups used in this analysis are those who reported themselves or their families as utilizers of the clinic and those who did not report any utilization.

Discriminant analysis provides two kinds of results. First, after a group of variables are found to discriminate between utilizers and nonutilizers, the analysis selects those variables of a group with the greatest power to discriminate between these utilization categories. Second, the variables selected by the analysis are checked with the observed survey data to determine the percentage of the data that the model predicts.

From the data collected before the clinic opened, the discriminant analysis determined that the greater differences between utilizers and nonutilizers was a function containing the items, occupation of male head-of-household, health interference with daily activities, worry about receiving emergency medical care, and distance of home from the

physician's assistant clinic. This implies that the higher the occupational status, the greater the worry about receiving emergency medical care, and the closer one lives to the clinic, then the more likely one was to use the clinic. These findings are representative of the predisposing, enabling, and illness-level components of the framework. Table 22 presents the prediction results for Wave I data. The model predicted that, out of the forty-four actual nonutilizers, thirty-seven would not utilize the clinic within the first year. It also predicted that, out of the sixty utilizers, forty would utilize the clinic within the first year. This means the nonutilizers have been accurately identified by these variables 84.1 percent of the time and utilizers 66.7 percent. The weighted average correctly classified was 74 percent.

The discriminant function derived from Wave II data was different. The reason the set of variables has changed is that the differences between variable means for utilizers and nonutilizers in Wave II are closer to zero than in Wave I. In general, this means that both utilizers and nonutilizers experienced change during the year. Furthermore, the selected set of variables in the Wave I function no longer clearly discriminates differences. Utilizers and nonutilizers in Wave II can no longer be classified as different in terms of perception of health, health interference with daily activities, and worry about receiving emergency medical care. Occupation of male head-of-household remained a classifying item in Wave II, but the difference added less discriminating power to the function than it did in Wave I.

TABLE 22
Discriminant Functions for Wave 1
Prediction Results

Actual Group	No. of Cases	Predicted Group Membership	
		Nonutilizer	Utilizer
Nonutilizers	44	37	7
Utilizers	60	20	40

Percent of "Grouped" Cases Correctly Classified: 74.04 percent

The discriminant function that determined the greatest difference between utilizers and nonutilizers in Wave II was a function composed of prospective utilization, distance from home to clinic, and perception of receiving enough care. The utilizers used the clinic if they intended to use the clinic for some or all of their health-care needs, lived close to the clinic, and perceived that they were receiving enough medical care. Table 23 presents the prediction results. These variables were able to accurately predict nonutilization 81 percent of the time and utilization 65.6 percent of the time. The segments of the framework represented were distance from the clinic, an enabling component, and perception of enough care, an illness-level component. The predisposing component was no longer included.

Tables 24 and 25 depict the comparison of the means of the selected variables for Wave I and Wave II. Tables 26 and 27 depict the comparison of selected variables by utilizer and nonutilizers. These four tables delineate the items and their importance in the discriminant functions.

The data have shown the clinic has not gained its share of potential utilizers in the county. The results of the discriminant analysis isolated predictive determinants of potential utilizers. The policy makers of the clinic must decide if this is the segment of the county that they want to serve.

Summary

This chapter presented the results and the interpretations of the survey findings. Six specific questions were addressed. The composition of each survey was presented. The lack of change or impact of the survey items was demonstrated, as each of the six specific questions was addressed. The conclusion drawn from these analyses addressed the

TABLE 23
Discriminant Functions for Wave II
Prediction Results

Actual Group	No. of Cases	Predicted Group Membership	
		Nonutilizer	Utilizer
Nonutilizers	42	34	8
Utilizers	64	22	42

Percent of "Grouped" Cases Correctly Classified: 71.70 percent

TABLE 24
 Comparison of Wave I and Wave II
 Variable Means for Nonutilizers

Variables	Wave I	Wave II
Occupation	3.0682	2.9286
Marital Status	1.0682	1.0000
Perceived State of Health	1.3182	1.3571
Perception of Health Interference	1.9182	1.7857
Worry About Emergency Health Care Services	1.5909	1.6667
Use of Prescription Drugs	1.6364	1.6190
Perception of Enough Care	1.2045	1.1667
Sector	2.4773	2.4524
Family Physician Visits	0.8636	1.6667

TABLE 25
Comparison of Wave I and Wave II
Variable Means for Utilizers

Variables	Wave I	Wave II
Occupation	2.3167	2.3906
Marital Status	1.0333	1.0156
Perceived State of Health	1.3500	1.3125
Perception of Health Interference	1.6167	1.7188
Worry About Emergency Health Care Services	2.1333	1.5000
Use of Prescription Drugs	1.6000	1.5469
Perception of Enough Care	1.2500	1.0469
Sector	1.8667	1.8750
Family Physician Visits	0.9333	1.5625

Table 26
Wave 1 Variable Means by Utilization

Variables	Nonutilizers	Utilizers
Occupation	3.0682	2.3167
Marital Status	1.0682	1.0333
Perceived State of Health	1.3182	1.3500
Perception of Health Interference	1.8182	1.6167
Worry About Emergency Health Care Services	1.5909	2.1333
Use of Prescription Drugs	1.6364	1.6000
Perception of Enough Care	1.2045	1.2500
Sector	2.4773	1.8667
Family Physician Visits	0.8636	0.9833

TABLE 27

Wave II Variable Means by Utilization

Variables	Nonutilizers	Utilizers
Occupation	2.9286	2.3906
Marital Status	1.0000	1.0156
Perceived State of Health	1.3571	1.3125
Perception of Health Interference	1.7857	1.7188
Worry About Emergency Health Care Services	1.6667	1.5000
Use of Prescription Drugs	1.6190	1.5469
Perception of Enough Care	1.1667	1.0469
Sector	2.4524	1.8750
Family Physician Visits	1.6667	1.5625
Prospective Utilization	2.6429	1.8281

the major research question which asked, did the county accept, as measured by clinic utilization, the physician's assistant clinic as a viable source of primary health-care delivery. In addition to bivariate analysis, a multivariate analysis was undertaken. The latter analysis is limited by the data. The items used in the discriminant analysis are primarily ordinal. It would be erroneous to discuss the magnitude of the items in each function. A discussion of the direction of each variable, however, is valid. The analysis does list the ranking of the response categories. For example, the Wave I discriminant function demonstrated that occupation of the male head-of-household was a key variable in the pattern of utilization. The higher the occupation score then, the greater the prediction of clinic utilization. This means that white-collar workers are more prone to use the clinic. Because of the limitations of the data, it does not mean that white-collar workers have an exact mathematical probability of using the clinic that is greater than the other occupational groups.

The findings and interpretations are assembled and discussed in the next chapter, Summary and Conclusions.

CHAPTER VI SUMMARY AND CONCLUSIONS

This research describes the impact of a physician's assistant clinic on the health practices of a rural county in the southeastern United States. The county had no practicing physician within its boundaries. The major research question was: is the physician's assistant clinic accepted as a source of primary health care by the community's residents as measured by clinic utilization? This question and its corollaries were addressed through the analysis of health survey data.

The major question was answered in general with several qualifications. Based on this impact-evaluation research, the mere availability of a new health care service does not significantly impact a population. A premise for this research and the creation of the physician's assistant clinic was, a community without its own health care services would, after the establishing of an innovative health provider clinic, be able to meet its health service demands. This premise was wrong in that both surveys showed that 80 percent of its citizens were already in and utilizing an existing primary health care system at some level within the last year. To demonstrate the impact of this new health care provider, the choice of this county was a poor one. This high base biased nonusers in a number of ways:

- 1) they may not have perceived a need for this health care service;

- 2) they may not have perceived the need to try a different type of health care service;
- 3) they may have been satisfied with their existing health care and they did not want to alter it;
- 4) the clinic gave a sense of security to the residents but the clinic was not strong enough to cause a change in their health seeking behavior;
- 5) those residents who sought health-care services had become accustomed to seeking them in the nearby urban area.

The seeming lack of residents substituting the clinic for their normal place of receiving health care may in fact be due to time. Perhaps individuals take a time period longer than one year to begin to substitute the clinic for their usual health-care-service mode. Also, since it was determined that once a family utilizes the clinic, the family has a positive attitude toward using it again, it may simply be that some of the residents of the county have not had a need for the health-care services that they perceive are available at the clinic.

The conceptual framework, as the guide for the analysis, was a model of health-care utilization. Several guiding questions operationalized the general research question into more descriptive components. These questions each addressed a related but separate issue of the evaluation of the physician's assistant clinic. The data were aggregated into comparison groups of utilizers and nonutilizers.

The first specific question determined who utilized the clinic. Of the predisposing variables, the primary descriptor of clinic utilization was the occupation of the male head-of-household. Occupation

was used as an indicator of social class. The white-collar workers, the middle and upper classes, were more prone to use the clinic than the lower classes of the county. Typically, the upper and middle classes use health service more routinely. These classes have traditionally been motivated to try new commodities and products. These individuals are socialized into keeping up with the Jones's and being first on the block to have a new product. The physician's assistant may have been considered by some as a new product.

The enabling variables, the degree of previous health-care utilization, was also examined as a description of utilization. Heavy utilizers, those who utilize health services more than the national average, may also be more inclined to use the clinic. This was not always the case. Heavy utilizers of all health services were shown to have used the clinic but heavy utilizers of just physicians did not nor did they plan to utilize the clinic for most of their health-service needs. The heavy utilization of physicians then, affected the prospective clinic utilization. Perhaps physicians in the neighboring counties feel that they will lose some of their frequent patients, and may not be referring these patients to the clinic.

The second question attempted to determine for what specific illnesses the county residents utilized the clinic. The data showed residents of the county primarily go to the clinic for minor, routine services. That is to be expected as this fact is also true for family practitioners, the traditional primary health-care provider. The utilizers of the clinic, however, had changed with regard to the illness-level variables of perceived state of health and health interference with their daily activities, more positively than did nonutilizers. Both

groups showed a positive change toward receiving more care. The utilizers, however, were less worried about receiving emergency health-care and about having an undetected disease.

The idea that improvements in the health perceptions of the county occurred because of the opening of the physician's assistant clinic was partially demonstrated. There were more positive changes, less illness in year 2 than in year 1, in the illness level variables of the individuals who had been utilizers of the clinic. These changes, however, could not be directly attributed to the clinic. Because the utilizers and nonutilizer groups were not significantly different on these variables, it was deduced that the positive changes were attributable to clinic utilization.

The third question addressed the continued use of the clinic by the county. These findings point out that once the clinic is utilized, residents plan to use it again for some but not all of their health service needs. In addition, when the individual uses the clinic he will be satisfied, in general with the service, and in particular with the quality of care received. The fourth question addressed the comparison of the clinic to other providers of health care. The utilizers favored the clinic in comparison to other health services with respect to the clinic's geographical location, its cost, the ease in getting an appointment, and the ease in talking about their medical problems with clinic staff. The nonusers systematically did not respond to these questions. Since the utilizers seem satisfied with the quality and convenience of care given at the clinic, the nonusers may also be satisfied when they do use the clinic. It appears then, that getting county residents to use the clinic is the major hurdle. Once that objective is reached, the individual will be satisfied with the services at the clinic.

At this point in time, the use of the clinic did not seem to affect the utilization of other health services. This was the concern of the fifth question. No difference could be detected between utilizers and nonutilizers of the clinic with regard to physician visits, drug use, or Pap tests. There was less hospitalization for clinic nonutilizers. This is explained in that these individuals are in general nonusers of most services. If this group does not go to hospitals, they probably will not go to a clinic. Thus, the clinic is not a substitute or replacement health service for the county. It is an alternative service where minor medical problems may be treated with satisfaction.

The last question determined which segments within the county utilized the clinic. This was done through discriminant analysis. This analysis demonstrated that all three components of the Andersen-Newman framework, the predisposing, enabling and illness level variables, were descriptive of health service utilization only before the opening of the clinic. After the opening of the clinic, the predisposing or sociodemographic variables were no longer the descriptors of clinic utilizers. The enabling and illness-level variables, however, did remain important descriptors. One possible explanation of why the sociodemographic variables were not descriptors of clinic utilization is that the county was very homogeneous with respect to these variables. The descriptive analysis of clinic utilization verified the Andersen-Newman framework of health service utilization conceptually. The framework is a general base for beginning an examination of both actual and prospective utilization of health service. Not every variable is necessary in every particular situation, but the categories of variables are important.

This study has also verified the belief that every county must have its own practicing primary health-care provider is mistaken. The history of rural health care has depicted a situation whereby rural physicians have been and are leaving these areas to pursue more rewarding careers in metropolitan areas. The Hill-Burton Act of 1946 and its modifications within the past thirty years had led to several problems for the late 1970s. This act provided moneys for the construction of health-care facilities chiefly in rural and underserved areas. The result of the Hill-Burton Act is that there are now several newly built rural hospitals that have neither professional staff nor patients. Staff are more attracted to metropolitan areas and patients are attracted to medical facilities in nearby cities. The existence of these Hill-Burton hospitals has presented several problems. The hospitals are underutilized. As a solution to the underutilization and in order to more completely use the ancillary services of these hospitals, some are turning a proportion of their acute beds into skilled nursing facility beds.

The findings of this research and the modifications underway at some Hill-Burton hospitals demonstrate that the provision of facilities, e.g., hospital beds to rural areas may not be the best approach to rural health-care delivery. With the increase in automobile ownership and the improvement of highways, the access to health-care providers should now be measured in time; not miles or county borders. Hospitals were shown not to be the correct solution. The solution is perhaps for the provision of thoroughly prepared and equipped health emergency teams and facilities. These teams and their equipment would be far less costly than the construction, staffing and maintenance of a small rural hospital or clinic and perhaps even more efficient and effective.

Although the community impact of the clinic was not statistically significant, several other goals were reached. First, the clinic did provide a training site and trial clinical experience for an experiment dealing with the potential uses of physician's assistants. Second, the clinic did take some of the routine service burden away from the providers in nearby counties. Third, the clinic did satisfy the community need for security in having a health-care provider available for emergencies. In this rural agricultural community, the residents now worry less about being able to receive health-care service in an emergency. The data did not indicate that this was a community which was not being serviced by health-care providers. The data did suggest that the clinic added a sense of security and an element of convenience to county residents.

There are several research designs with which to evaluate an action program. The program, the process, the outcome, and the impact of the action program can each be separately evaluated. This research was limited to an impact design. The impact of the physician's assistant clinic appeared marginal. The result need not reflect on the program, the process, or the outcome evaluations. If the other evaluations were carried out, a more complete evaluation of the physician's assistant would be ascertained, which may aid in explaining the marginal impact of the clinic on the county as shown in this research.

Every day, grants and contracts are awarded by governmental and private agencies to investigate the various aspects of the health-care system. The investigations are typically the result of societal demands on these agencies to demonstrate that every individual within society can exercise his right to health-care provision. The creation, design

and functioning of the physician's assistant clinic have all been developed within the past ten years. It is a wise decision to monitor this and any new health-care provider to determine its feasibility in the ever-enlarging health-care system. The monitoring will provide necessary feedback for the upgrading, continuance, and discontinuance of new programs.

This initial descriptive analysis was able to determine deductively some additional research questions that should be addressed by policy makers and health-service researchers before a new health program begins. Without the type of descriptive research as conducted in this study, these questions may never have surfaced. Unless these questions are answered, modifications of the health-care system, which undoubtedly will be forthcoming at great expense, may be undertaken with marginal values to both the community and societal systems. These questions are: was it determined that the community needs a comprehensive health-care provider? A needs assessment study would provide the answer to this question. Was it determined that there was evidence of support for the utilization of the new service; that is, would there be referrals from the existing health-care system as well as from the lay-referral network? Did the community want this new service or were they satisfied with the existing but seemingly inconvenient health-care system? Is there a design to create a legitimate market for the new service? Who would underwrite the cost of the new service: that is, would the new service be eligible for third-party payments and could the community afford the new service? Would the new service be financially self-supporting or would it be dependent on another health organization for support? Would the new service, in meeting the needs of the community

be utilized to its capacity? It is the contention of this author that if extensive planning were done, based on the responses to these or similar questions, the new programs may have an impact on their intended population. The health service would provide and maintain healthy and contributing members of the community.

APPENDIX A
GILCHRIST COUNTY HEALTH STUDY QUESTIONNAIRE
(WAVE 1)

GILCHRIST COUNTY HEALTH STUDY QUESTIONNAIRE

(PHASE 1)

- 1) Name _____
 Address _____

- 2) Election District _____
- 3) In general, how would you say your health has been during the last 12 months?
 excellent 1 good 2 fair 3 poor 4 very bad 5 ? 6
- 4) Does your health interfere with your daily activities?
 never 1 rarely 2 sometimes 3 often 4 all the time 5 ? 6
- 5) About how many times in the past 12 months have you been seen by a doctor?
 none 1 1-2 times 2 3-5 times 3 6-10 times 4 over 10 times 5
 ? 6
- 6) If yes; what were you seen for?
 List _____

- 7) How many times did you have to be in the hospital during the last 12 months?
 0 1 1 2 2 3 3-4 4 Over 4 5 ? 6
- 8) Did you go for a yearly checkup by a doctor during the last 12 months even though you were feeling well?
 yes 1 no 2 ? 3
- 9) How often are you worried or nervous?
 never 1 seldom 2 sometimes 3 often 4 all the time 5
 ? 6

Has anyone living in the house ever had any one of the following diseases?

45) Tuberculosis

yes 1 no 2 ? 3

46) Diabetes

yes 1 no 2 ? 3

47) Heart Disease

yes 1 no 2 ? 3

48) High Blood Pressure

yes 1 no 2 ? 3

49) Low Blood or Anemia

yes 1 no 2 ? 3

50) Glaucoma

yes 1 no 2 ? 3

Now I would like to ask you some questions about where you would go to get medical attention if you felt that you or a member of your family needed it.

What would you do:

51) If you had a fever and were coughing up blood?

take care of it yourself 1 regular family doctor 2

specialist (M.D.) 3 university hospital 4 other hospital 5

druggist 6 public health nurse 7 friend or relative 8

faith healer or minister 9 other 10 ? 11 N.A. 12

- 52) If you twisted your ankle and it was still quite swollen a day later?

self 1 family M.D. 2 specialist (M.D.) 3
 university hospital 4 other hospital 5 druggist 6
 public health nurse 7 friend or relative 8 faith healer or
 minister 9 other 10

- 53) If you had bleeding between periods (if post-menopausal, further vaginal bleeding)?

self 1 family M.D. 2 specialist (M.D.) 3 university
 hospital 4 other hospital 5 druggist 6 public health nurse 7
 friend or relative 8 faith healer or minister 9 other 10
 ? 11 N.A. 12

- 54) If one of your children developed a high fever?

self 1 family M.D. 2 specialist (M.D.) 3 university
 hospital 4 other hospital 5 druggist 6 public health nurse 7
 friend or relative 8 faith healer or minister 9 other 10
 ? 11 N.A. 12

- 55) If you began losing weight without trying to?

self 1 family M.D. 2 specialist (M.D.) 3 university
 hospital 4 other hospital 5 druggist 6 public health nurse 7
 friend or relative 8 faith healer or minister 9 other 10
 ? 11 N.A. 12

- 56) If you became very depressed?

self 1 family M.D. 2 specialist (M.D.) 3 university
 hospital 4 other hospital 5 druggist 6 public health nurse 7
 friend or relative 8 faith healer or minister 9 other 10
 ? 11 N.A. 12

57) If you had a sudden heart attack?

self 1 family M.D. 2 specialist 3 university hospital 4
 other hospital 5 druggist 6 public health nurse 7 friend or
 relative 8 faith healer or minister 9 other 10 ? 11
 N.A. 12

58) If you had a fever and a running nose?

self 1 family M.D. 2 specialist 3 university hospital 4
 other hospital 5 druggist 6 public health nurse 7 friend or
 relative 8 faith healer or minister 9 other 10 ? 11
 N.A. 12

Finally, I would just like to ask you a few general questions about you and your family.

59) Check whether person is?

black 1 white 2 other 3

60) Check sex of person

male 1 female 2

61) Check mileage from city limits to Trenton

within town 1 0-10 miles 2 10.1-20 miles 3 over 20 miles 4
 ? 5

62) How old are you?

15-24 1 25-34 2 35-44 3 45-54 4 55-64 5 over 64 6 ? 7

63) What was the last year of school you completed?

0-4 1 5-8 2 some high school 3 high school graduate 4
 some college 5 college graduate 6 some post-graduate (including
 masters) 7 PHD or equivalent 8 other 9 ? 10 N.A. 11

- 64) How big was the town where you spent most of your childhood?
 rural (under 2,000) 1 big town (2,000-10,000) 2 small city
 (10,000-100,000) 3 big city (over 100,000) 4 ? 5 N.A. 6
- 65) How many years have you lived in Gilchrist County?
 under 2 years 1 2-5 years 2 5-20 years 3 over 20 years 4
 ? 5 N.A. 6
- 66) Does your family have a car or truck?
 yes 1 no 2 ? 3 N.A. 4
- 67) If yes, how many?
 1 1 2 2 3 3 over 3 4 ? 5
- 68) Are you presently employed full-time (over 30 hours)?
 yes 1 no 2 ? 3 N.A. 4
- 69) If yes, what do you do?
 List _____

- 70) Is your husband presently employed full-time?
 yes 1 no 2 ? 3 N.A. 4
- 71) If yes, what does he do?
 List _____

- 72) If no, how long has he been unemployed?
 Under 1 year 1 1-5 years 2 6-10 years 3 over 10 years 4
 ? 5 N.A. 6
- 73) About how much do you and your family earn each year?
 under 3,000 1 3,000-5,999 2 6,000-9,999 3 10,000-15,000 4
 over 15,000 5 ? 6 N.A. 7

- 74) Does your family presently have any health insurance?
yes 1 no 2 ? 3 N.A. 4
- 75) If yes, what type?
Blue Cross-Blue Shield 1 Private other 2 Medicare 3
Medicaid 4 1 & 3 5 2 & 3 6 3 & 4 7 ? 8 N.A. 9
- 76) If income under \$3,000, are you currently receiving any income from a welfare agency?
yes 1 no 2 ? 3 N.A. 4
- 77) How many community or civic organizations do you and your husband belong to?
0 1 1 2 2 3 3-5 4 over 5 5 ? 6 N.A. 7
- 78) Check general appearance of living room.
neat 1 reasonably well kept 2 somewhat sloppy 3
very sloppy 4 shambles 5
- 79) How much do you worry about not being able to get medical care in case of an emergency for you or your family?
never 1 occasionally 2 often 3 all the time 4 ? 5
N.A. 6
- 80) How much do you worry that you or a member of your family may have a disease that hasn't been found by a doctor yet?
never 1 occasionally 2 often 3 all the time 4 ? 5
N.A. 6

Other Adult (over 15 and out of school)

- 21) Check if person is
 husband 1 other 2 list _____
- 22) Name _____
- 23) How old is he (she) ?
 15-24 1 25-34 2 35-44 3 45-54 4 55-64 5 over 65 6 ? 7
- 24) In general, how would you say his (her) health has been during the last 12 months?
 excellent 1 good 2 fair 3 poor 4 very bad 5 ? 6
- 25) Does his (her) health interfere with his (her)
 never 1 rarely 2 sometimes 3 often 4 all the time 5 ? 6
- 26) About how many times in the last 12 months has he (she) been seen by an M.D.?
 none 1 1-2 times 2 3-5 times 3 6-10 times 4 over 10 5
 ? 6
- 27) If yes, what was he (she) seen for?
 List _____

- 28) How many times did he (she) have to be in the hospital during the last 12 months?
 0 1 1 2 2 3 3-4 4 over 4 5 ? 6
- 29) Did he (she) go for a yearly checkup by a doctor during the last 12 months even though he (she) was feeling well?
 yes 1 no 2 ? 3
- 30) How often does he (she) get worried or nervous?
 never 1 seldom 2 sometimes 3 often 4 all the time 5 ? 6
- 31) Is he (she) taking regularly any medicines prescribed by a doctor?
 yes 1 no 2 ? 3

32) If yes, how many is he (she) taking?

1 1 2 2 3 3 4-5 4 over 5 5 ? 6

33) Is he currently using regularly any non-prescription medicines or home remedies?

yes 1 no 2 ? 3 4-5 4 over 5 5 ? 6

34) If yes, how many is he taking?

1 1 2 2 3 3 4-5 4 over 5 5 ? 6

35) Is he presently taking any nerve pills?

yes 1 no 2 ? 3

36) Do you think that he is presently receiving enough medical care?

yes 1 no 2 ? 3

37) If no, why not?

List _____

APPENDIX B
GILCHRIST COUNTY HEALTH STUDY QUESTIONNAIRE
(WAVE 11)

GILCHRIST COUNTY HEALTH STUDY QUESTIONNAIRE

(PHASE II)

Department of Community Health and
Family Medicine

University of Florida

Interview identification number _____

Family Name _____

Election District _____

Attempts to interview: (Date, time, outcome, Interviewer)

Week of interview _____

1. Who lives with you

NAME	AGE	SEX	RELATIONSHIP	TOTALS
_____	_____	_____	_____	# OF ADULTS
_____	_____	_____	_____	_____
_____	_____	_____	_____	# OF CHILDREN
_____	_____	_____	_____	_____
_____	_____	_____	_____	FAMILY SIZE
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Check who was interviewed

Card #	Col. #	Punch
	1	4
Identification #	2-4	---
Election District	5-6	---
Attempts	7-8	---
Week	9-10	---
# of Adults	11-12	---
# of Children	13-14	---
family size	15-16	---
family composition	17-18	---

2. What is your marital status?			1. single 2. married 3. widowed 4. separated 5. divorced 6. living together
	19	---	
3. What is your age?	20-21	---	EXACT AGE _____

This series of questions deals with the health of you and your family.

4. In general how would you say your health has been during the last 12 months: Would you say:			1. excellent 2. good 3. fair 4. poor 5. very bad 8. don't know 9. not applicable
	22	---	
5. Does your health interfere with your daily activities? Would you say:			1. never 2. rarely 3. often 4. sometimes 5. all the time 8. don't know 9. not applicable
	23	---	
6. Would you say that your health has been better, worse, or the same as last year?			1. better 2. same 3. worse 8. don't know 9. not applicable
	24	---	

7. How often are you worried or nervous? Would you say...	25	—	1. never 2. seldom 3. sometimes 4. often 8. don't know 9. not applicable
8. Have you received medical care or a physical from anyone in the past 12 months?	26	—	1. yes 2. no 8. don't know 9. not applicable
9. Are you now taking regularly any medicine prescribed by a doctor? If yes, How many different prescriptions?	27	—	1. yes 2. no 3. don't know 9. not applicable
	28	—	1. 1 2. 2 3. 3 4. 4-5 5. over 5 8. don't know 9. not applicable
10. Are you currently using regularly any non-prescription medicine or home remedies? If yes, How many different ones are you taking?	29	—	1. yes 2. no 8. don't know 9. not applicable
	30	—	1. 1 2. 2 3. 3 4. 4-5 5. over 5 8. don't know 9. not applicable
11. Are you presently taking nerve pills?	31	—	1. yes 2. no 3. don't know 9. not applicable
12. Were you pregnant in the last 12 months?	32	—	1. yes 2. no 8. don't know 9. not applicable
13. Have you had a Pap (female) test in the past 12 months?	33	—	1. yes 2. no 8. don't know 9. not applicable
14. Do you think that you are presently receiving enough medical care? If no, Why not?	34	—	1. yes 2. no 8. don't know 9. not applicable
	35-36	— —	List: _____
	37-38	— —	_____

15. Do you know about the Medical Center in Trenton?	39	_____	1. yes 2. no 3. don't know 9. not applicable
16. Have you ever been to the Medical Center yourself as a patient?	40	_____	1. yes 2. no 3. don't know 9. not applicable
A. If no, Probe: Why not? List reasons:	41-42	_____	
_____	43-44	_____	

B. If yes, Probe: 1. For what?	45-46	_____	
_____	47-48	_____	
_____			EXACT NUMBER
2. How many times? (Include house calls)	49-50	_____	_____
By whom were you treated at the Medical Center? List:	51	_____	1. M.D. 2. P.A. 3. combination 8. don't know 9. not applicable
_____	52	_____	

C. Do you know his name? List:	53	_____	1. yes 2. no 3. don't know 9. not applicable

17. How many times in the past year have you been seen by a doctor other than at the Medical Center?	54-55	_____	EXACT NUMBER
			98. don't know 99. not applicable
If yes, who were they?			List:
What for?	56-57	_____	Who (1) _____
Where?	58-59	_____	What (1) _____
	60-61	_____	Where (1) _____
	62-63	_____	Who (2) _____
	64-65	_____	What (2) _____
	66-67	_____	Where (2) _____
Probe: Emergency Room Use			
18. Have you sought help from any sources other than the Medical Center or a doctor in the past 12 months?	68	_____	1. yes 2. no 3. don't know 9. not applicable
If yes, who were they?	69-70	_____	List: Who (1) _____
	71-72	_____	What (1) _____
	73-74	_____	Where (1) _____

CARD NUMBER	1	5	
ID NUMBER	2-4	___	___
What for?	5-6	___	Who (2)
	7-8	___	What (2)
	9-10	___	Where (2)
19. Have you been a patient in the hospital during the past 12 months?	11	___	1. yes 2. no 3. don't know 9. not applicable
If yes, when?	12-13	___	When (1)
Where?	14-15	___	Where (1)
For what?	16-17	___	For what (1)
Who sent you to the hospital?	18-19	___	Who (1)
	20-21	___	When (2)
	22-23	___	Where (2)
	24-25	___	For what (2)
	26-27	___	Who (2)
Code for more than 2	28-29	___	
20. Are you currently being seen by anyone for health reasons?	30	___	1. yes 2. no 9. not applicable
If yes, by whom?	31-32	___	List:
For what?	33-34	___	Whom (1)
For how long?	35-36	___	What (1)
What is being done?	37-38	___	How long (1)
Where?	39-40	___	Where (1)
	41-42	___	Whom (2)
	43-44	___	What (2)
			How long (2)
			Where (2)

THIS SET OF QUESTIONS DEALS WITH THE HEALTH OF THE MEMBERS OF YOUR HOUSEHOLD.

		EXACT AGE	
21.	What is your husband's age?	47-48	_____
22.	In general, how would you say your husband's health has been during the past 12 months?		1. EXCELLENT 2. FAIR 3. GOOD 4. POOR 5. VERY BAD 6. don't know 7. not applicable
	Would you say...	49	_____
23.	Does his health interfere with his daily activities:		1. NEVER 2. RARELY 3. SOMETIMES 4. OFTEN 5. ALL THE TIME 6. don't know
	Would you say...	50	_____
24.	Would you say that your husband's health has been better, worse, or the same as last year?		1. BETTER 2. SAME 3. WORSE 4. don't know 5. not applicable
		51	_____
25.	How often is your husband worried or nervous?		1. NEVER 2. SELDOM 3. SOMETIMES 4. OFTEN 5. ALL THE TIME 6. don't know 7. not applicable
	Would you say...	52	_____
26.	Is your husband taking regularly any medicine prescribed by a doctor?	53	1. yes 2. no
	If yes, how many different medicines?	54	1. 1 2. 2 3. 3 4. 4-5 5. over 5 6. don't know 7. not applicable
27.	Is your husband currently using regularly any non-prescription medicines or home remedies?	55	1. yes 2. no
	If yes, how many is he taking?	56	1. 1 2. 2 3. 3 4. 4-5 5. over 5 6. don't know 7. not applicable
28.	Is he presently taking nerve pills?	57	1. yes 2. no 3. don't know 4. not applicable

29.	Do you think that your husband is presently receiving enough medical care? If no, why not?	58 59-60	_____ _____	1. yes 2. no 3. don't know 9. not applicable List: _____
30.	Has your husband received medical care or a physical from anyone in the past 12 months?	61	_____	1. yes 2. no 3. don't know 9. not applicable
31.	Has your husband been to the Medical Center as a patient?	62	_____	1. yes 2. no 3. don't know 9. not applicable
A.	If no, Probe: Why not? List reasons: _____ _____	63-64 65-66	_____ _____	
B.	If yes, Probe: 1. For what? List: _____ _____	67-68 69-70	_____ _____	
	2. How many times? (Include house calls)	71-72	_____	EXACT NUMBER _____
	CARD NUMBER	1	6	
	ID NUMBER	2-4	____	
32.	By whom was he treated at the Medical Center? List: _____ _____	5 6	_____ _____	1. M.D. 2. P.A. 3. combination 8. don't know 9. not applicable
A.	Do you know his name?	7	_____	1. yes 2. no 3. don't know 9. not applicable
33.	How many times in the past year has your husband been seen by doctors, other than at the Medical Center? If visits, who were they and what for?	8-9 10-11 12-13 14-15	_____ _____ _____ _____	EXACT NUMBER 98. don't know 99. not applicable List: Who (1) _____ What (1) _____ Where (1) _____

What for?			List: Who (2)
Where?	16-17	___	
	18-19	___	What (2)
Probe: Emergency Room Use	20-21	___	Where (2)
34. Has your husband sought medical help from any sources other than the Medical Center or a doctor in the past 12 months?	22	___	1. yes 2. no 3. don't know 9. not applicable
If yes, who was it?			List: Who (1)
What for?	23-24	___	
Where?	25-26	___	What (1)
	27-28	___	Where (1)
	29-30	___	List: Who (2)
	31-32	___	What (2)
	33-34	___	Where (2)
35. Has your husband been a patient in the hospital during the past 12 months?	35	___	1. yes 2. no 3. don't know 9. not applicable
If yes, when?			List: When (1)
Where?	36-37	___	
For what?	38-39	___	Where (1)
Who sent him to the hospital?	40-41	___	What (1)
	42-43	___	Who (1)
	44-45	___	List: When (2)
	46-47	___	Where (2)
	48-49	___	What (2)
	50-51	___	Who (2)

36. Is your husband currently
being seen for health
reasons?

52

1. yes
2. no
3. don't know
9. not applicable

If yes, by whom?

List:

For what?

53-54

Whom (1)

For how long?

What (1)

What is being done?

55-56

Where?

57-58

How long (1)

59-60

Done (1)

61-62

Where (1)

63-64

List:

Whom (2)

65-66

What (2)

67-68

How long (2)

69-70

Done (2)

71-72

Where (2)

CARD NUMBER

1

7

ID NUMBER

2-4

THE NEXT SERIES OF QUESTIONS ASKS ABOUT THE HEALTH OF YOUR CHILDREN.

37. How many children are presently living at home with you?	5-6	_____	EXACT NUMBER _____
38. Are there any children in the house who you would say are sick more often than most children their age?	7	_____	1. yes 2. no 8. don't know 9. not applicable
If yes, how many?	8-9	_____	Exact Number _____
39. Have any of your children received medical care or a physical from anyone in the past 12 months?	10	_____	1. yes 2. no 8. don't know 9. not applicable
39.A. Have any of your children been to the Medical Center as patients?	11	_____	1. yes 2. no 8. don't know 9. not applicable
A. If no, Probe: Why not?			
List reasons:			
_____	12-13	_____	
_____	14-15	_____	
B. If yes, Probe:			
1. For What?			
List reasons:			
_____	16-17	_____	
_____	18-19	_____	
2. How many times? (Include house calls)	20-21	_____	EXACT NUMBER _____
By whom were they treated at the Medical Center?			
List:			1. M.D. 2. P.A. 3. combination 3. don't know 9. not applicable
_____	22	_____	
_____	23	_____	
Do you know his name?			1. yes 2. no 8. don't know 9. not applicable
	24	_____	
40. How many times in the past year have your children been seen by doctors other than at the Medical Center?	25-26	_____	EXACT NUMBER _____
			98. don't know 99. not applicable
If yes, who were they?			List: Who (1) _____
What for?	27-28	_____	
Where?	29-30	_____	What (1) _____

	31-32	_____	Where (1) _____
			List: Who (2) _____
	33-34	_____	What (2) _____
	35-36	_____	Where (2) _____
Probe: Emergency Room Use	37-38	_____	_____
41. In the past year have your children received medical help from any sources other than the Medical Center or a doctor?	39	_____	1. yes 2. no 3. don't know 4. not applicable
If yes, who was it?			List: Who (1) _____
What for?	40-41	_____	What (1) _____
Where?	42-43	_____	Where (1) _____
	44-45	_____	List: Who (2) _____
	46-47	_____	What (2) _____
	48-49	_____	Where (2) _____
	50-51	_____	_____
42. How many of your children have been patients in the hospital during the past 12 months?	52	_____	EXACT NUMBER _____
If yes, when?			List: When (2) _____
Where?	53-54	_____	Where (1) _____
For what?	55-56	_____	For what (1) _____
Who sent them to the hospital?	57-58	_____	Who (1) _____
	59-60	_____	List: When (2) _____
	61-62	_____	Where (2) _____
	63-64	_____	For what (2) _____
	65-66	_____	Who (2) _____
	67-68	_____	_____

CARD NUMBER	1	3	
ID NUMBER	2-4	---	
43. How many of your children are currently being seen for health reasons?	5	---	EXACT NUMBER
If yes, by whom?			List:
For what?	6-7	---	Whom (1)
For how long?	8-9	---	What (1)
What is being done?	10-11	---	Long (1)
Where?	12-13	---	Done (1)
	14-15	---	Where (1)
	16-17	---	List:
	18-19	---	Whom (2)
	20-21	---	What (2)
	22-23	---	Long (2)
	24-25	---	Done (2)
			Where (2)

THE NEXT SET OF QUESTIONS DEALS WITH THE OTHER ADULT MEMBERS IN YOUR HOUSEHOLD. OTHER ADULT-FIRST-OLDEST

44. What is his/her relationship to you?	26-27	___	List: _____
45. What is his/her age?	28-29	___	EXACT NUMBER _____
46. In general, how would you say his/her health has been during the past 12 months?	30	___	1. EXCELLENT 2. GOOD 3. FAIR 4. POOR 5. VERY BAD 6. don't know 9. not applicable
47. Does his/her health interfere with his/her daily activities? Would you say...	31	___	1. NEVER 2. SELDOM 3. SOMETIMES 4. OFTEN 5. ALL OF THE TIME 6. don't know 9. not applicable
48. Would you say that his/her health has been better, worse, or the same as last year?	32	___	1. BETTER 2. SAME 3. WORSE 6. don't know 9. not applicable
49. How often is he/she worried or nervous? Would you say...	33	___	1. NEVER 2. SELDOM 3. SOMETIMES 4. OFTEN 5. ALL OF THE TIME 6. don't know 9. not applicable
50. Is he/she now taking regularly any medicine prescribed by a doctor?	34	___	1. yes 2. no 6. don't know 9. not applicable
If yes, how many?	35	___	1. 1 2. 2 3. 3 4. 4-5 5. over 5 6. don't know 9. not applicable
51. Is he/she currently using regularly any non-prescription medicines or home remedies?	36	___	1. yes 2. no 6. don't know 9. not applicable
If yes, how many is he/she taking?	37	___	1. 1 2. 2 3. 3 4. 4-5 5. over 5 6. don't know 9. not applicable

52. Is he/she presently taking nerve pills?	38	_____	1. yes 2. no 8. don't know 9. not applicable
53. Do you think that he/she is presently receiving enough medical care?	39	_____	1. yes 2. no 8. don't know 9. not applicable
If no, why not?	40-41	_____	List: _____
	42-43	_____	_____
	44-45	_____	_____
54. Has he/she received medical care or a physical from anyone in the past 12 months?	46	_____	1. yes 2. no 8. don't know 9. not applicable
55. Has he/she been to the Medical Center as a patient?	47	_____	1. yes 2. no 8. don't know 9. not applicable
A. If no, Probe: Why not? List: _____	48-49	_____	
	50-51	_____	
B. If yes, Probe: 1. For what? List: _____	52-53	_____	What (1) _____
	54-55	_____	Times (1) _____
	56-57	_____	Whom (1) _____
2. How many times? (Include house calls)	58-59	_____	What (2) _____
	60-61	_____	Times (2) _____
	62-63	_____	Whom (2) _____
3. By whom was he/she treated? List: _____			1. M.D. 2. P.A. 3. combination 8. don't know 9. not applicable
C. Do you know his name?	64	_____	1. yes 2. no 8. don't know 9. not applicable
56. How many times in the past year has he/she been seen by doctors other than at the Medical Center?	65-66	_____	EXACT NUMBER 98. don't know 99. not applicable

If yes, Who was it? What for? Where did he/she go?	67-68	_____	List: Who (1) _____
		_____	What for? (1) _____
	69-70	_____	Where did he go (1) _____
	71-72	_____	_____
Probe: Emergency Room Use			
CARD NUMBER	1	?	
ID NUMBER	2-4	_____	
	5-6	_____	Who (2) _____
	7-8	_____	What for (2) _____
	9-10	_____	Where did he go (2) _____
57. In the past year has he/she received medical help from any sources other than the Medical Center or a doctor?	11	_____	1. yes 2. no 8. don't know 9. not applicable
If yes, Who was it?	12-13	_____	List: Who (1) _____
What for?	14-15	_____	What for (1) _____
Where did he/she go?	16-17	_____	Where (1) _____
	18-19	_____	Who (2) _____
	20-21	_____	What for (2) _____
	22-23	_____	Where (2) _____
58. Has he/she been a patient in the hospital during the past 12 months?	24	_____	1. yes 2. no 8. don't know 9. not applicable
If yes, When?	25-26	_____	List: When (1) _____
Where:	27-28	_____	Where (1) _____
For what?	29-30	_____	For what (1) _____
Who sent him/her to the hospital?	31-32	_____	Who sent him (1) _____

	33-34		When (2)
	35-36		Where (2)
	37-38		For what (2)
	39-40		Who (2)
If more than 2 times, list exact number.	41-42		EXACT NUMBER
59. Is he/she currently being seen for any health reasons?	43		1. yes 2. no 8. don't know 9. not applicable
If yes, By whom?	44-45		List: Whom (1)
For what?	46-47		What (1)
For how long?	48-49		How long (1)
What is being done?	50-51		What done (1)
Where is it being done?	52-53		Where (1)
	54-55		Whom (2)
	56-57		What (2)
	58-59		How long (2)
	60-61		What done (2)
	62-63		Where (2)
If more than 2 reasons, list exact number.	64-65		EXACT NUMBER

THE NEXT SET OF QUESTIONS DEALS WITH THE OTHER ADULT MEMBERS IN YOUR HOUSEHOLD.
OTHER ADULT-LAST-YOUNGEST

60. What is his/her relationship to you? .	66-67	___	List: _____
61. What is his/her age?	68-69	___	EXACT NUMBER _____
62. In general, how would you say his/her health has been during the past 12 months?	70	___	1. EXCELLENT 2. GOOD 3. FAIR 4. POOR 5. VERY POOR 8. don't know 9. not applicable
63. Does his/her health interfere with his/her daily activities? Would you say...	71	___	1. NEVER 2. SELDOM 3. SOMETIMES 4. OFTEN 5. ALL OF THE TIME 8. don't know 9. not applicable
64. Would you say that his/her health has been better, worse or the same as last year?	72	___	1. BETTER 2. SAME 3. WORSE 8. don't know 9. not applicable
65. How often is he/she worried or nervous? Would you say...	73	___	1. NEVER 2. SELDOM 3. SOMETIMES 4. OFTEN 5. ALL OF THE TIME 8. don't know 9. not applicable
66. Is he/she now taking regularly any medicine prescribed by a doctor?	74	___	1. yes 2. no 8. don't know 9. not applicable
If yes, how many?	75	___	1. 1 2. 2 3. 3 4. 4-5 5. over 5 8. don't know 9. not applicable
67. Is he/she currently using regularly any non-prescription medicines or home remedies?	76	___	1. yes 2. no 8. don't know 9. not applicable
CARD NUMBER	1	A	
ID NUMBER	2-4	___	

<p>If yes, how many is he/she taking?</p>	5	—	<p>1. 1 2. 2 3. 3 4. 4-5 5. over 5 8. don't know 9. not applicable</p>
<p>66. Is he/she presently taking nerve pills?</p>	6	—	<p>1. yes 2. no 3. don't know 9. not applicable</p>
<p>67. Do you think that he/she is presently receiving enough medical care?</p> <p>If no, why not?</p>	7	—	<p>1. yes 2. no 3. don't know 9. not applicable</p> <p>List:</p> <p>8-9 ————</p> <p>10-11 ————</p> <p>12-13 ————</p>
<p>70. Has he/she received medical care or a physical from anyone in the past 12 months?</p>	14	—	<p>1. yes 2. no 3. don't know 9. not applicable</p>
<p>71. Has he/she been to the Medical Center as a patient?</p> <p>A. If no, Probe: Why not? List:</p> <p>—————</p> <p>—————</p> <p>B. If yes, Probe:</p> <p>1. For what? List:</p> <p>—————</p> <p>—————</p> <p>2. How many times? (Include house calls)</p> <p>26-27</p> <p>3. By whom was he/she treated? List:</p> <p>—————</p> <p>—————</p>	<p>15</p> <p>16-17</p> <p>18-19</p> <p>20-21</p> <p>22-23</p> <p>24-25</p> <p>26-27</p> <p>28-29</p> <p>30-31</p>	<p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p>	<p>1. yes 2. no 3. don't know 9. not applicable</p> <p>What (1)</p> <p>Times (1)</p> <p>Whom (1)</p> <p>What (2)</p> <p>Times (2)</p> <p>Whom (2)</p>
<p>C. Do you know his name?</p>	32	—	<p>1. yes 2. no 3. don't know 9. not applicable</p>

		EXACT NUMBER
72. How many times in the past year has he/she been seen by doctors other than at the Medical Center?	33-34	98. don't know 99. not applicable
If yes, Who was it?	35-36	List: Who (1)
What for?	37-38	What for (1)
Where did he/she go?	39-40	Where did he go (1)
	41-42	Who (2)
	43-44	What for (2)
	45-46	Where did he go (2)
Probe: Emergency Room Use		
73. In the past year has he/she received medical help from any sources other than the Medical Center or a doctor?	47	1. yes 2. no 3. don't know 9. not applicable
If yes, Who was it?	48-49	List: Who (1)
What for?	50-51	What for (1)
Where did he/she go?	52-53	Where (1)
	54-55	Who (2)
	56-57	What for (2)
	58-59	Where (2)
74. Has he/she been a patient in the hospital during the past 12 months?	60	1. yes 2. no 3. don't know 9. not applicable
If yes, When?	61-62	List: When (1)
Where?	63-64	Where (1)
For what?	65-66	For what (1)
Who sent him/her to the hospital?	67-68	Who sent him (1)
	69-70	When (2)

	71-72	_____	Where (2)
	73-74	_____	For what (2)
	75-76	_____	Who (2)
If more than 2 times, list exact number.	77-78	_____	EXACT NUMBER
CARD NUMBER	1	2	
ID NUMBER	2-4		
75. Is he/she currently being seen for any health reasons?	5	_____	1. yes 2. no 3. don't know 4. not applicable
If yes, By whom?	6-7	_____	List: Whom (1)
For what?	8-9	_____	What (1)
For how long?	10-11	_____	How long (1)
What is being done?	12-13	_____	What done (1)
Where is it being done?	14-15	_____	Where (1)
	16-17	_____	When (2)
	18-19	_____	What (2)
	20-21	_____	How long (2)
	22-23	_____	What done (2)
	24-25	_____	Where (2)
If more than 2 reasons, list exact number.	26-27	_____	EXACT NUMBER

FOR ALL RESPONDENTS			
76.	How did you hear about the Medical Center? List: 1. _____ 2. _____	28-29 30-31	00. never heard of it 01. family 02. friends 03. newspaper 04. M.D. referral 05. taken there in an emergency 06. school 07. other 08. don't remember 09. don't know 09. not applicable
77.	Do you have the telephone number somewhere in case you need it?	32	1. yes 2. no 8. don't know 9. not applicable
78.	Do you know who is responsible for the new medical center being opened here in Trenton? If yes, Who? _____ Do you know who else? _____ _____	33	1. yes 2. no 8. don't know 9. not applicable
79.	Have you ever called the Medical Center for medical advice? Exclude making appointments.	34	1. yes 2. no 8. don't know 9. not applicable
80.	Have you ever had a housecall from the Medical Center?	35	1. yes 2. no 8. don't know 9. not applicable

FOR THOSE WHOSE FAMILIES USED THE MEDICAL CENTER IN TRENTON

81.	All things considered, how do you like the medical Center? Would you say...	36	1. A GREAT DEAL 2. SOMEWHAT 3. NOT AT ALL 3. don't know 9. not applicable
82.	What are some of the things you like most about it?	37 38 39	List: 1. _____ 2. _____ 3. _____
83.	What are some of the things you do not like about it?	40 41 42	List: 1. _____ 2. _____ 3. _____

THIS SECTION ASKS YOU TO COMPARE THE MEDICAL CENTER IN TRENTON WITH OTHER PLACES YOU MIGHT GO FOR MEDICAL CARE

ASK ALL RESPONDENTS

34.	With regard to how easy it is to get to the office for medical care, how would you compare the Medical Center in Trenton with other places you might go to instead? Would you say that the Medical Center is easier to get to, about the same, or not as easy to get to?	43	1. EASIER 2. ABOUT THE SAME 3. NOT AS EASY 4. don't know 5. not applicable
35.	With regard to how easy it is to get an appointment when you want it, how would you compare the Medical Center in Trenton with other places where you might get medical care? Would you say that the Medical Center in Trenton is easier, about the same, or not as easy for making an appointment?	44	1. EASIER 2. ABOUT THE SAME 3. NOT AS EASY 4. don't know 5. not applicable
36.	With regard to being able to talk comfortably about your problems, how would you compare the Medical Center with other places where you might get medical care? Would you say that the Medical Center in Trenton is easier, about the same, or not as easy?	45	1. EASIER 2. ABOUT THE SAME 3. NOT AS EASY 4. don't know 5. not applicable
37.	Comparing the quality of medical care, would you say that care at the Medical Center is better, about the same, or not as good as what you might get elsewhere?	46	1. BETTER 2. SAME 3. NOT AS GOOD 4. don't know 5. not applicable
38.	Comparing the cost of medical care, would you say that the Medical Center is more expensive, about the same, or less expensive than elsewhere?	47	1. MORE EXPENSIVE 2. SAME 3. LESS EXPENSIVE 4. don't know 5. not applicable
39.	Which of the following statements best applies to you and your family?	48	I would go to the Medical Center in Trenton: 1. FOR ALL OF THE FAMILY'S HEALTH CARE 2. FOR ONLY SOME OF THE FAMILY'S HEALTH CARE 3. EMERGENCY 4. NOT AT ALL 5. don't know 6. not applicable
	If not for all, where would you go for health care?	49-50	List:
		51-52	

90.	How much do you worry about not being able to get medical care in case of an emergency for you or for your family? Would you say...	53	1. NEVER 2. OCCASIONALLY 3. OFTEN 4. ALL OF THE TIME 5. don't know 6. not applicable
91.	How much do you worry that you or a member of your family may have a disease that has not been found by a doctor yet? Would you say...	54	1. NEVER 2. OCCASIONALLY 3. OFTEN 4. ALL THE TIME 5. don't know 6. not applicable
92.	If you were to use the Medical Center again soon, would you prefer to be treated by any particular person there?	55	1. yes 2. no 3. don't know 4. not applicable
	If yes, who?	56	1. AL KENT 2. GARY BEXROAT 3. HUGH CEDERQUIST 4. DR. HENRY 5. DR. CLARK 6. DR. REYNOLDS 7. OTHER 8. don't know 9. not applicable
	List:	57	
93.	Do you know <u>Al Kent</u> ?	58	1. yes NAME 2. yes PHYSICIAN ASST. 3. no 4. don't know 5. not applicable
	If the respondent DOES NOT KNOW HIM, substitute Hugh Cedarquist, if still no recognition, substitute Gary Bexroat. Substitute Physician Assistant.	59	List:
	If yes, what do you call him?	60	1. yes 2. no
	Do you know his training?	61	List:
	If yes, what is it? (Can you describe it?)	62	
94.	How do you think other people you know in the county like the Medical Center? Would you say...	63	1. A GREAT DEAL 2. SOMEWHAT 3. NOT AT ALL 4. don't know 5. not applicable
	List:	64	
95.	Has a physician made any comments to you or to your family about the Medical Center in Trenton?	65	1. yes 2. no 3. don't know 4. not applicable
	If yes, list reply.	66	List:

96. Who in your family usually decides that someone should see a doctor? List:			1. MOTHER 2. FATHER 3. CHILD 4. GRANDPARENT 5. INDIVIDUAL CONCERNED 6. OTHER 7. don't know 8. not applicable
1. _____	66	___	
2. _____	67	___	

THIS LAST SECTION IS GENERAL INFORMATION ABOUT THE FAMILY:

97. What was the last year of school that you completed?	68-69	___	List: _____
98. Are you presently employed?	70	___	1. yes, full time 2. yes, part time 3. no 4. don't know 5. not applicable
If yes, what do you do?	71-72	___	List: _____
CARD NUMBER	1	C	
ID NUMBER	2-4	___	
99. What was the last year of school your husband completed?	5-6	___	List: _____
100. If your husband presently employed?	7	___	1. yes, full time 2. yes, part time 3. no 4. don't know 5. not applicable
If yes, what does he do?	8-9	___	List: _____
101. Does your family have a car or a truck?	11	___	1. yes 2. no 3. don't know 4. not applicable
If yes, how many?	12-13	___	EXACT NUMBER _____
102. About how much do you and your family earn each year?	14	___	1. under 3,000 2. 3,000 to 5,999 3. 6,000 to 9,999 4. 10,000 to 14,999 5. over 15,000 6. don't know 7. not applicable

If income under 6,000 are you receiving any income from a welfare agency?	15	—	1. yes 2. no 8. don't know 9. not applicable
103. Does your family presently have any health insurance?	16	—	1. yes 2. no 3. don't know 9. not applicable
If yes, what type?	17	—	1. BLUE CROSS/BLUE SHIELD 2. PRIVATE OTHER 3. MEDICARE 4. MEDICAID 5. 1 and 3 6. 2 and 3 7. 3 and 4 8. don't know 9. not applicable
104. List the sector in the county where the respondent lives.	18-19	— —	—
TO INTERVIEWERS: By looking at the respondent, how would you assess her health?	20	—	1. excellent 2. good 3. fair 4. poor 5. very bad

RESPONDENT BACKGROUND CHARACTERISTICS FOR "M" RESPONDENTS ONLY.

105. Race	31	—	<ul style="list-style-type: none"> 1. Black 2. White 3. Other
106. Sex	32	—	<ul style="list-style-type: none"> 1. Male 2. Female
107. How big was the town where you spent your childhood?	33	—	<ul style="list-style-type: none"> 1. rural under 2,000 2. big town 2-10,000 3. small city 10-100,000 4. big city over 100,000 5. don't know 9. not applicable
108. How many years have you lived in Gilchrist County?	34	—	<ul style="list-style-type: none"> 1. under 2 years 2. 2-5 years 3. 5-20 years 4. over 20 years 5. don't know
109. Check approximate mileage from home to Trenton.	35	—	<ul style="list-style-type: none"> 1. 0-10 miles 2. 10.1 to 20 miles 3. over 20 miles 5. don't know

BIBLIOGRAPHY

- Adamson, T.E. "Critical Issues in the Use of Physician Associates and Assistants." American Journal of Public Health, 61:1765-79 (September, 1971).
- Aday, L.A., and Andersen, R. Access to Medical Care. Ann Arbor: Health Administration Press, 1975.
- American Medical Association. Essentials of an Approved Program for the Assistant to the Primary Care Physician. Chicago: American Medical Association, 1971.
- Andersen, R. A Behavioral Model of Families' Use of Health Services. Research Series No. 25. Chicago Center for Health Administration Studies, University of Chicago, 1968.
- Andersen, R., et al. Expenditures for Personal Health Services: National Trends and Variation -- 1953-1970. Washington: Bureau of Health Services Research and Evaluation: U.S. Department of Health, Education and Welfare Publication No. (HRA) 74-3105, 1973.
- Andersen, R. and Newman, J.F. "Societal and Individual Determinants of Medical Care Utilization in the United States." The Milbank Memorial Fund Quarterly, 51:95-120 (Winter, 1973).
- Anderson, J.G., and Bartkus, D.E. "Choice of Medical Care: A Behavioral Model of Health and Illness Behavior." Journal of Health & Social Behavior, 14:348-362 (December, 1973).
- Anderson, J.G. "Causal Models and Social Indicators: Toward the Development of Social Systems Model." American Sociological Review, 38:285-301 (June, 1974).
- Andreoli, K.G. "A Look at the Physician's Assistant." American Journal of Nursing, 72:710-3 (April, 1972).
- Backstrom, C.H., and Hursh, G.D. Survey Research. Chicago: Northwestern University Press, 1963.
- Ballenger, M.D. "The Physician's Assistant. Legal Considerations." Hospitals, 45:58-61 (June 1, 1971).
- Beck, R.G. "Economic Class and Access to Physician Services Under Public Medical Care Insurance." International Journal of Health Services, 3:341-345 (Summer, 1973).

- Bergen, S.S., and Clapp, R.W. "Physician Assistants' Training. A Model for Human Resources Development." Journal of the Medical Society of New Jersey, 69:251-3 (March, 1972).
- Bialock, H.M. Social Statistics. New York: McGraw-Hill Book Company, Inc., 1960.
- Bodenheimer, T.S. "Patterns of American Ambulatory Care." Inquiry, 8:26-35 (September, 1970).
- Bohrnstedt, G.W. "Reliability and Validity Assessment in Attitude Measurement." In Gene F. Summers, Attitude Measurement. Chicago: Rand McNally & Company, pp. 80-99, 1970.
- Borland, B.L., Williams, F.E., and Taylor, D. "A Survey of Attitudes of Physicians on Proper Use of Physician's Assistants." Health Service Report, 87:467-72 (May, 1972).
- Brook, R.H. "A Study of Methodologic Problems Associated with Assessment of Quality of Care," (Ph.D. dissertation, The Johns Hopkins University, 1972).
- Chen, M.K. "Access to Health Care: A Preliminary Model." National Center for Health Services Research and Development, 1973.
- Coe, R.M., and Fichtenbaum, L. "Utilization of Physician Assistants: Some Implications for Medical Practice." Medical Care, 10:497-504 (November-December, 1972).
- Coser, L.A. The Functions of Social Conflict. New York: The Free Press, 1956.
- Davidson, G.E. "Nursing Service." Hospitals, 45:127-30 (April 1, 1971).
- Demaria, W.J., et al. "Evaluation of the Marine Physician Assistant Program," HSMA Health Report, 86:195-201 (March, 1971).
- Donabedian, A. Aspects of Medical Care Administration. Cambridge: Harvard University Press, 1973.
- Ennes, H. "Toward a Constructive Appraisal of Community Health Services." American Journal of Public Health, 47:5-6 (November, 1957).
- Estes, E.H., Jr., and Howard, D.R. "Paramedical Personnel in the Distribution of Health Care." Archives of Internal Medicine, 127:70-2 (January, 1971).
- Estes, E.H., Jr. "Physician's Assistants." AORN Journal, 15:95-100 (January, 1972).

- Estes, E.H., Jr. "Teaching Medical Assistants for the Doctor." Medical Progress through Technology, 1:196-200 (February, 1973).
- Etzioni, A., and Lehman, E. "Some Dangers in Valid Social Measurement." Annals of American Academy of Political and Social Sciences, 373:1-15 (September, 1967).
- Fleck, A. "Evaluation as a Logical Process." Canadian Journal of Public Health, 52:185 (May, 1961).
- Flook, E.E. and Sanazaro, P.J. Health Services Research and R&D In Perspective. Ann Arbor: Health Administration Press, 1973.
- Ford, L.C. "Physician's Assistant: Why, Who and How?." AORN Journal, 15:41-60 (April, 1972).
- Freeborn, D.K. and Greenlich, M.R. "Evaluation of the Performance of Ambulatory Care Systems' Research Equipments and Opportunities." Medical Care, 11:68-75 (March-April Supplement, 1973).
- Greenberg, B., and Mattison, R.F. "The Ways and Wherefores of Program Evaluation." Canadian Journal of Public Health, 46:293 (July, 1955).
- Greenberg, E.M. "Evaluating the Effectiveness of Mental Health Services." Milbank Memorial Fund Quarterly, 44:20-49 (January, 1966).
- Hawley, P.R. "Evaluation of the Quality of Patients Care." American Journal of Public Health, 45:153 (December, 1955).
- Henry, R.A. "Use of Physician's Assistants in Gilchrist County, Florida." Health Service Report, 87:687-92 (October, 1972).
- Hershberger, S. "Revamping the Health Care Team." Journal of Obstetric, Gynecologic and Neonatal Nursing, 2:54-7 (March-April, 1973).
- Herzog, E. Some Guidelines for Evaluative Research. U.S. Department of Health, Education and Welfare, Washington, D.C., 1959.
- Hollingshead, A. "Medical Sociology: A Brief Review." Health and Society, 51:531-42, 1973.
- Horsley, A.W., and Aschenbrener, T.D. "Physician's Assistant Training Program: Questions and Answers." Journal of Iowa Medical Society, 63:155-6 (April, 1973).
- Hutchinson, G.B. "Evaluation of Preventive Services." Journal of Chronic Diseases, 11:497 (May, 1960).

- James, G., and Helleboe, H. "Evaluation During the Development of a Public Health Program in Chronic Diseases." American Journal of Public Health, 45:149 (February, 1955).
- Johnson, T.M. "The New Curer: Anthropological Perspectives in the Training of Physician's Assistants." (Ph.D. dissertation, University of Florida, 1976).
- Lambertsen, E.C. "Perspective on the Physician's Assistant." Nursing Outlook, 20:32-6 (January, 1972).
- Lave, J.R., et al. "The Physician's Assistant. Exploration of the Concept." Hospitals, 45:42-51 (June 1, 1971).
- Lemkan, P.V., and Pasamanick, B. "Problems in Evaluation of Mental Health Programs." American Journal of Orthopsychiatry, 27:55 (January, 1957).
- Lewis, C.E. "The Physician's Assistant. Acceptance of Physician's Assistants." Hospitals, 45:62-4 (June 1, 1971).
- Litman, T.J. "Public Perceptions for the Physicians' Assistant -- A Survey of the Attitudes and Opinions of Rural Iowa and Minnesota Residents." American Journal of Public Health, 62:343-6 (March, 1972).
- Lohrenz, F.N. "The Marshfield Clinic Physician-Assistant Concept. Critical Evaluation of Advantages, Disadvantages and Prospects." New England Journal of Medicine, 284:301-4 (February 11, 1971).
- MacMahon, B., Pugh, T.F., Hutchinson, G.B. "Principles in the Evaluation of Community Mental Health Programs." American Journal of Public Health, 51:963-3 (July, 1961).
- McKinlay, J.B. Research Methods in Health Care. New York: PRODIST, 1973.
- McKinlay, J.B. "Some Approaches and Problems in the Study of the Use of Services - An Overview." Journal of Health and Social Behavior, 13:115-152 (June, 1971).
- Mechanic, D. Public Expectations and Health Care: Essays on the Changing Organization of Health Services. New York: John Wiley and Sons, 1972.
- Merton, R.K. Social Theory and Social Structure. Glencoe, Illinois: Free Press, 1957.
- Miale, J.E. "Caring for the Surgical Patient." Hospitals, 45:72-4 (July 1, 1971).

- Nie, N.H., et al. Statistical Package for the Social Sciences. New York: McGraw-Hill Book Company, 1970.
- Nolan, L.C., and Nolan, G.H. "Status of the New Health Care Providers: The Physician's Assistants." Medical Care Review, 32:430-56 (April, 1975).
- Onion, D.K., and Schulten, T. "The Physician Assistant in Maine: Two Pending Proposals." Journal of the Maine Medical Association, 64:98-101 (May, 1973).
- Oppenheim, A.N. Questionnaire Design and Attitude Measurement. New York: Basic Books, 1966.
- O'Toole, R. The Organization, Management and Tactics of Social Research. Cambridge: Schenkman, 1971.
- Parsons, T. The Social System. New York: The Free Press, 1951.
- Paul, B.D. "Social Science in Public Health." American Journal of Public Health, 46:1390 (November, 1956).
- Phillips, D.L., and Clancy, K.J. "Some Effects of 'Social Desirability' in Survey Studies." American Journal of Sociology, 77:921-940 (March, 1972).
- "Physician Visits: Volume and Interval Since Last Visit. United States - 1971." Vital and Health Statistics, Series 10, No. 97, U.S. Department of Health, Education and Welfare, Washington, D.C. (March, 1975).
- "Physician's Assistant Jury Still Out." American Medical News, 18:1 (January 27, 1975).
- "The Physician's Assistants. A Visit to Bowman Gray." RN, 33:34-5 (October, 1970).
- Richardson, E.L. "Meeting the Nation's Health Manpower Needs." Journal of Medical Education, 47:3-9 (January, 1972).
- Roemer, Milton I. "Historical Perspective of Health Services in Rural America." in Rural Health Services: Organization, Delivery, and Use. edited by E. Hassinger and L.R. Whiting. Ames, Iowa: The Iowa State University Press, 1976.
- Rogers, D.E. "Shattuck Lecture -- The American Health Care Scene." New England Journal of Medicine, 288:1377-1383 (June 28, 1973).
- Rogers, H.L. "Physician Assistants and Medical Practice." Journal of the Medical Association of Georgia, 61:133 (April, 1972).

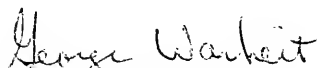
- Roghamm, K.J. "Looking for the Medical Care Crisis in Utilization Data." Inquiry, 11:282-91 (December, 1974).
- Roghamm, K.J., and Haggerty, R.J. "Measuring the Use of Health Services by Household Interview: A Comparison of Procedures Used in Three Child Health Surveys." International Journal of Epidemiology, 3:71-71 (1974).
- Rosemberg, M. The Logic of Survey Analysis. New York: Basic Books, 1968.
- Rosenberg, S. "Use of Physician Associates." American Journal of Public Health, 62:465-6 (April, 1972).
- Rossi, P. "Booby Traps and Pitfalls in the Evaluation of Social Action Programs." Proceedings of American Statistical Association-Social Science Section, (1966).
- Rothberg, J.S. "Nurse and Physician's Assistant: Issues and Relationships." Nursing Outlook, 21:154-8 (March, 1973).
- Sadler, A., Sadler, B., and Bliss, A. The Physician's Assistant: Today and Tomorrow. New Haven: Yale University Press, 1972.
- Schwab, J.J., et al. "Community Mental Health Evaluation: An Assessment of Needs and Services." submitted for publication in Evaluation.
- Shaw, B.L. "New Man in Town: The P.A." RN, 33:33 (October, 1970).
- Shortell, S. "Patterns of Medical Care: Issues of Access, Cost, and Continuity." Paper presented at Center for Health Administration Studies, Chicago (April 5, 1973).
- Smith, R.A. "MEDEX -- An Operational and Replicated Manpower Program: Increasing the Delivery of Health Services." American Journal of Public Health, 62:1563-5 (December, 1972).
- Sterling, T.D., and Pollack, S.V. Introduction to Statistical Data Processing. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968.
- Stone, L.A., and Bassett, G.R. "The MEDEX Medical Occupation Concept in Subjective Medical Occupation - Professional Multidimensional Space." Psychological Reports, 31:167-74 (August, 1972).
- Strunk, H.K. "Patients Attitudes Towards Physician Assistant." California Medicine, 118:73-77 (June, 1973).

- Stuart, R.S., et al., "The Training and Role of Physicians' Assistants in the Army Medical Department." Military Medicine, 138:227-30 (April, 1973).
- Suchman, E.A. Evaluative Research. New York: Russell Sage, 1967.
- Suchman, E.A. "Medical Deprivation." American Journal of Orthopsychiatry, 36:665-72 (July, 1966).
- Suchman, E.A. "Social Patterns of Illness and Medical Care." Journal of Health and Human Behavior, 6:2-16 (Spring, 1965).
- The Utilization of Health Services: Indices and Correlates, A Research Bibliography. The National Center for Health Services Research and Development, Department of Health, Education and Welfare, Health Services and Mental Health Administration, Washington, D.C., 1972.
- U.S. Department of Health, Education and Welfare. Health: United States 1975, Rockville, Maryland: U.S. Department of Health, Education and Welfare, Public Health Service, Health Resources Administration, National Center for Health Statistics, 1976.
- U.S. Department of Health, Education and Welfare. "Comparison of Hospitalization Reporting in Three Survey Procedures." Vital and Health Statistics, Series 2, Number 18, (July, 1965).
- Van de Geer, J.P. Introduction to Multivariate Analysis for the Social Sciences. San Francisco: W.H. Freeman and Company, 1971.
- Warheit, G.J., et al. Planning for Change: Needs Assessment Approaches. The National Institute of Mental Health, no date.
- Weiss, C.H. Evaluating Action Programs: Readings in Social Action and Education. Boston: Allyn and Bacon, Inc., 1972.
- Weiss, C.H. Evaluation Research. Englewood Cliffs, New Jersey: Prentice-Hall, 1972.
- Young, L.S. "Physician's Assistants and the Law." Nursing Outlook, 20:36-41 (January, 1972).
- Zborowski, M. "Cultural Components in Response to Pain." Journal of Social Issues, 8:16-30 (Fall, 1952).
- Zeitlin, I.M. Rethinking Sociology. New York: Appleton-Century-Crofts, 1973.

BIOGRAPHICAL SKETCH

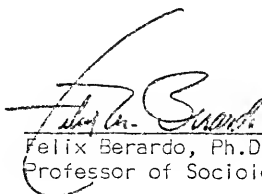
Robert Edmund Burke was born in Boston, March 31, 1947. He graduated from Boston College High School and attended Boston College where he received both his A.B. and M.A. in Sociology. Before pursuing further graduate studies, he was an instructor at The College of Saint Teresa in Winona, Minnesota. He entered the Ph.D. program in Sociology at the University of Florida the fall of 1971, with Medical Sociology as his major area of concentration. While at the University of Florida, he served as President of Beta Chapter of Alpha Kappa Delta, the National Sociology Honorary. Since 1974, Mr. Burke has been Senior Analyst for the Research and Development activity of Medicus Systems Corporation.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



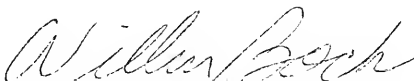
George Waiteit, Ph.D.
Professor of Sociology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



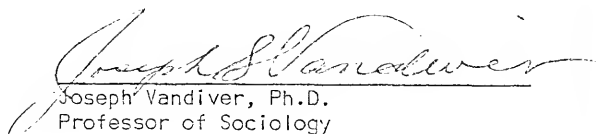
Felix Berardo, Ph.D.
Professor of Sociology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



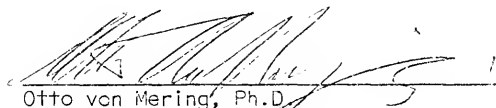
Wilbur Bock, Ph.D.
Associate Professor of Sociology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Joseph Vandiver, Ph.D.
Professor of Sociology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Otto von Mering, Ph.D.
Professor of Anthropology

This dissertation was submitted to the Graduate Faculty of the Department of Sociology in the College of Arts and Sciences and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Dean, Graduate School

